TANKOGRAD - WORLD WAR ONE

N° 1010

IMPERIAL GERMAN ARMY
WEAPONS AND SOLDIERS OF
THE GREAT WAR 1914 - 1918

Lastkraftwagen

German Military Trucks Vol. 1

M.K.XVII.364
Reserveteile

Verlag Jochen Vollert
Tankograd

by Jochen Vollert

TANKOGRAD - WORLD WAR ONE
N° 1010

IMPERIAL GERMAN ARMY
WEAPONS AND SOLDIERS OF
THE GREAT WAR 1914 - 1918

Lastkraftwagen

German Military Trucks Vol. 1

Jochen Vollert

Copyright Verlag Jochen Vollert - Tankograd Publishing 2021 - Alle Rechte vorbehalten - All rights reserved
Verlag Jochen Vollert - Tankograd Publishing - Am Weichselgarten 5, 91058 Erlangen, Germany

No part of this publication may be copied or reproduced without prior written permission from the publisher.

ISBN 978-3-936519-50-1

Introduction by the Publisher

World War One - the 'Great War to end all wars'. While in many countries, especially in Great Britain and in France still vividly alive, the memories about the first major international conflict faded away in other countries during the past decades, overshadowed by World War Two, the Cold War and most recently the War on Terror.

More than ninety years have passed since World War One has ended. For many it is now just a footnote in history while the last living soldiers who witnessed the bitter fighting recently passed away. For most people today the Great War was the war of trenches, a war on foot and in the mud. At first glance, few associate this landmark event with the rise of mechanisation in warfare, the first aircraft used in combat, the rise of the age of the machine gun, submarines, motor vehicles, tanks.....

This series of publications will, with hitherto unpublished material, close vital gaps in the history and equipment of the Imperial German Army of World War One to keep the memory of the soldiers of all armies of WW1 alive. They will not be forgotten.

***Jochen Vollert*, Publisher, August 2021**

Acknowledgements

The author wishes to thank the following persons:

Henry Hoppe for his general support over the past two decades in researching German Army motorisation and German truck production, and his invaluable help in identifying rare makes and spotting technical details for this publication.

Hans Lipp for his input on Imperial German Army organisation and identification of units.

Tim Gosling for his hands-on knowledge about truck restoration and his help in identifying the British makes.

Also thanks to Francois Vauvillier, Winfried A. Seidel and Beate Frank (Mercedes-Benz Classic)
and last but not least my father Joachim Vollert (†)
who was always on the lookout for motoring books for me on flea markets and collector's fairs

Without their contributions, this work would not have been as complete and correct as it is today!

***Jochen Vollert*, August 2021**

Author: Jochen Vollert

All photographs in this publication, if not otherwise credited:
Jochen Vollert Collection

With reference to the age of the published illustrations and photographs and their often unclear origin, we have not committed any intentional violation of copyright law. For the purpose of historical/technical completeness we may have included material which is under copyright of copyright holder unknown to us. In case of justified claims for copyright, please contact the author/publisher.
Unter Bezugnahme auf das Alter des vorliegenden Fotomaterials und die oft nicht nachvollziehbare Herkunft weisen wir darauf hin, dass in dieser Publikation keine absichtliche Verletzung des Urheberrechts vorgenommen wurde. Im Zweifelsfall ist aus historisch/dokumentarischen Gründen auch Material verwendet worden, dessen Urheberrechte nicht einwandfrei geklärt werden konnte. Bei berechtigt nachweislichen Ansprüchen bitten wir mit dem Verlag/Autor Kontakt aufzunehmen.

This is a historical/technical documentation. Any mention of companies or persons are for historical and technical purposes only, does not serve a commercial purpose.
Dies ist eine historisch/geschichtliche Dokumentation. Sämtliche Nennung von Firmen und Personen dienen der historischen Dokumentation, nicht dem Werbezwecke.

Contents

page chapter

1010
Lastkraftwagen Vol. 1

002 Introduction by the Publisher
003 Contents

004 01. Imperial German Army Motorisation
008 01.1 Army Motorisation - Facts and Figures
009 01.2 Army Motorisation - Trucks
012 01.3 Vehicle Identification
012 01.4 The Search for the Military Truck

017 02. Subsidy Trucks - Army Truck-Trailer Combinations
020 02.1 Army Truck-Trailer Combinations in Advertisements
028 02.2 Comparative Trials
032 02.3 Army Truck-Trailer Combinations in Service

036 03. Army Solo Trucks - Alphabetical by Manufacturer
037 03.1 Adler
047 03.2 Ageka
048 03.3 Ansbach
050 03.4 Audi
051 03.5 Benz
064 03.6 Bergmann
066 03.7 Braun
067 03.8 Büssing
081 03.9 DAAG
086 03.10 Daimler

096 Sources & Further Reading

1011
Lastkraftwagen Vol. 2

098 Introduction by the Publisher
099 Contents
100 Army Solo Trucks - Alphabetical by Manufacturer

101 03.11 Dixi
106 03.12 Dürkopp
108 03.13 Dux
110 03.14 Hansa-Lloyd
114 03.15 Horch
119 03.16 Komnick
120 03.17 LUC
121 03.18 Magirus
122 03.19 MAN-Saurer
123 03.20 Mannesmann-Mulag
129 03.21 Nacke
132 03.22 NAG
140 03.23 Opel
145 03.24 Podeus
146 03.25 Stoewer
151 03.26 Union
152 03.27 Vomag
154 03.28 Windhoff

155 04. Trucks of Foreign Make
163 05. In Wartime Service
176 06. Accidents, Recovery, Repair
184 07. Motor Troops' Uniforms
191 08. Documents

192 Sources & Further Reading

Front Cover:
Daimler 3- to 5-ton *Heereswagen*
Credit: Jochen Vollert Collection

01.

Deutsche Heeresmotorisierung im Kaiserreich
Imperial German Army Motorisation

The Motor Vehicle at War

World War One, in comparison to previous wars from the American Civil War of 1861-65 up till the Franco-Prussian War of 1870-71 that were dominated by large bodies of infantry supported by cavalry on horses and horse-drawn field artillery, was a war of what was then high-tech equipment. Yet with a strategy rooted in the 19th century, the Great War soon turned into stalemate in the trenches, with infantry and cavalry tactics becoming worthless. The answer lay in new technologies and weapons that had just seen first light in the early years of the 20th century: airships and aircraft in the air; submarines under the oceans; machine guns, artillery, and motor vehicles on land. All these new military tools would prove their value and see progress in military weapons that was almost unfathomable between 1914 and 1918. All this new technology of destruction would shape the outlines of coming modern conflicts such as World War Two and the Cold War.

The German View on Military Technology

In many countries of the late 19th and early 20th centuries, people got extremely interested in what technology was to bring next: the railroad, electric light, unbelievable advances in medicine, flying machines and coaches without horses. People stood in amazement in front of new inventions shown at international fairs and shows and what was published in magazines and books. Many nations embraced the technological leap forward into a brighter future.

Imperial Germany was one of the leading nations in technology, chemistry and medicine. In its first decades since foundation in January 1871, Germany became home of the brightest minds in science, and many of the advantages we take for granted today have their roots in these years just before World War One.

The Imperial German Army *, on the other hand, was strictly rooted in Prussian traditions – honour, duty and service to the country. And while much of the so often appreciated German "order of things" became fertile ground for science and advancement, the military with many of its senior officers being veterans of the Franco-Prussian War of 1870-71 that became the foundation of what was to become the first German state, stuck to iron traditions. Particularly in land warfare, the "old guard" was to rely on proven tactics and equipment that had granted victory before. Therefore the minds of many German high-ranking officers were deeply rooted in the victory of 1871 that was gained by soldiers and horses.

One major result of this backwardness was that, in 1914-15, the German Army was, in comparison to Great Britain and France, notoriously under-motorised. Only very slowly did the number of available motor vehicles become larger in later war years.

Pre-War Footsteps into Motor Vehicles

The effectiveness of motor vehicles for military applications in land warfare had been tested by the German Army in the years before World War One. As early as 1890 a *Versuchsabteilung der Eisenbahn-Brigade* (experimental detachment of the railroad brigade) was founded and in 1899 succeeded by the *Versuchsabteilung der Verkehrstruppen* (experimental detachment of transport) of the Prussian military. Its task was to analyse and trial new developments in motor transport for possible future applications with the army. The *Versuchsabteilung* began first trials with passenger cars, later followed by trucks and motorcycles.

In April 1907 the first *Kraftfahrabteilung der Verkehrstruppen* (motor vehicle detachment of the department of transport) was founded in Prussia. Bavaria had its own *Kraftfahrkompanie* company for trials with motor vehicles within the *Königlich Bayerisches Eisenbahn-Bataillon, Kraftfahr-Abteilung, München* (Royal Bavarian railroad battalion, department of motor vehicles, Munich).

Since 1908 the German military supported the purchase of subsidy trucks. By about 1911 only 650 private businessmen had taken up the option, a figure that would not change much up till 1914.

By October 1911 the *Kraftfahrabteilung der Verkehrstruppen* had reached battalion size made up of three companies. The task of the battalion was to make basic trials but also *Dauerfahrten* (long-distance trials), participate in military exercises and in general create the core of military drivers. These trials had the aim of gathering information about top speeds, maximum distances covered under different road conditions, general technical reliability of vehicles, fuel consumption, tyre wear and tear, necessary maintenance efforts and so forth. More detailed trials in the east involved the construction of engineer bridges to cross field obstacles. Some vehicles also participated in regular army exercises. Taking part in these pre-war trials was a small number of vehicles purchased by the army. The bulk, however, came from the *Freiwilliges Automobil-Korps* (voluntary military automobile corps). This paramilitary organisation consisted of nationalist reserve soldiers and civilians that maintained their vehicles and trained on them for the purpose of being absorbed into the army should the need arise to defend the fatherland. The trials were thorough and produced many positive results, yet they did not invoke any large-scale order of military-grade motor vehicles to be purchased by the Imperial Army.

By 1914 the battalion had reached the strength of four companies. In the war it served as reserve unit for all frontlines.

At the outbreak of the war the *Kraftfahrtruppe* (army motor transport corps) consisted of 200 officers, 12,000 non-commissioned officers and soldiers of rank and file.

Germany in 1914 posessed a total of 93,072 civilian motor vehicles of which 60,876 were passenger cars, 9,639 trucks and 22,557 motorcycles.

An Under-motorised Army

The Imperial German Army could, at the outbreak of war in August 1914, rely on about 4,000 military motor vehicles, almost all of which were trucks in the supply train.

By August 1915, the quantity of motor vehicles had increased to more than 20,000, both from regular army pre-war stocks (mostly trucks) and from civilian sources, either voluntarily given or impressed since the outbreak of hositilities (trucks, passenger cars and motorcycles):

°	8,600	passenger cars
°	10,400	trucks
°	1,700	motorcycles

Up till the autumn of 1915, all motorcycles and passenger cars were civilian models, there were no military designs available.

With many German motor vehicle manufacturers carrying on producing vehicles throughout the war, and with additional numbers of impressed vehicles both in the homeland and in the occupied territories, the number of motor vehicles in military service grew exponentially over the war years, even if it never reached the figures of the Entente.

The major limitations in German motor vehicle manufacturing were not the lack of factories, but shortages in raw materials. With Imperial Germany blocked from sea trade, there was a crucial shortage of rubber for tyres and high-octane fuel. This led, towards the end of the war, to curious stop-gap solutions such as using potato alcohol to power engines, and fitting full-steel wheels. Needless to say, these measures

---

* The amalgamation of the Royal Prussian, Royal Bavarian, Royal Saxonian and Royal Württemberg armies under the Kaiser's control after the declaration of general mobilisation on 01 August 1914, 17:00hrs.

did not improve confidence in motor vehicles among higher echelons of decision-makers.

By 1916, many of the civilian types of vehicles in the army were worn out and often in dire need of spare parts or repairs. This was mostly caused by the bad roads in the occupied territories, which reduced the lifespan of mechanical components and tyres by about 75%. New pneumatic rubber tyres or full-rubber tyres were virtually non-existent any longer, and one had to make do with patchwork solutions. In 1918 the *Kriegsbedingte Notbereifung* (emergency wartime tyres – a steel tyre cushioned with rubber set in cups only) showed up. As all these measures were just drops in the ocean, it was ordered that *Spritfresser* ("fuel eater") cars, such as large limousines for high-ranking officers and nobility, were mothballed and smaller passenger cars and *Kleinautos* (small cars or 'microcars') with lower fuel consumption and lower weight (tyre-saving) were preferred. This measure also concerned many smaller trucks with a limited, and hence inefficient, payload of less than 3 tonnes. Vehicles of the medical and field mail services were not part of these cut-down measures.

From 1916-18, the German military had at any time, and counting all frontlines, no more than about 40,000 motor vehicles in its ranks. These were split into:

°	5,400	motorcycles
°	12,000	passenger cars
°	25,000	trucks
°	1,600	trailers

In comparison, the Entente had in 1918 almost 200,000 motor vehicles on the Western Front alone: France 100,000; Great Britain 46,700; USA 40,000.

This 1:5 situation clearly underlined how military leaders in Germany had utterly underestimated the role the motor vehicle could play on a 20th-century battlefield.

The Kraftfahrtruppe in 1914

The German *Kraftfahrtruppe* entered World War One in 1914 with an improvised pre-war organisation. Although the *Lastkraftwesen* (organisation of military trucking) had been established and was well organised, too little money had been spent on the development and purchase of trucks, and the implemented subsidy scheme was by no means large enough to field the required number of transport vehicles in the later war years.

In terms of passenger cars, the situation was even worse as no money had been put aside for military-grade field cars or even suitable staff cars. The entire passenger car situation in the army relied first and foremost on the *Freiwilliges Automobil Korps* whose members had signed a contract to provide their cars for free in case of general mobilisation. For motorcycles, the Imperial Army would additionally rely on reserve soldiers who were drafted along with their rides. From about 1915 truck production in Germany almost entirely switched to deliveries for the army and the first military-grade motorcycles became available, while the production of military field cars never materialized.

General classes of motor vehicles in the Imperial Germany Army:

- *Personenkraftwagen* (passenger cars, staff cars)
- *Kleinautos* (small two-seater cars, today called 'microcars')
- Kraftomnibusse (buses) in the role of *Hilfs-Krankenkraftwagen* (auxiliary ambulances) and *Magazinarbeiter-Transport* (workmen transport)
- *Armeelastzüge* (heavy trucks with trailers)
- *Lastkraftwagen* (trucks)
- *Kavallerie-Lastkraftwagen* (trucks in cavalry units)
- *Leichte Lastkraftwagen* (light trucks)
- *Krankenkraftwagen* (ambulances)
- *Krafträder* (motorcycles).

Additionally, but not part of this overview due to their very different nature of employment:

- *Artilleriezugmaschinen* (artillery prime movers)
- *Panzerwagen* (armoured cars)
- *Panzer* (tanks)
- *Sonderfahrzeuge* (specialised vehicles).

It needs to be noted that almost any type of motor vehicle was seen as being road-bound with very limited or no off-road capability at all. Only passenger cars, small cars, ambulances and light trucks were seen as capable of crossing levelled hard ground over short distances and at very slow speeds so as not to overstress components of the chassis (wheels, axles, suspension and tyres). Drivers were ordered to choose longer road routes instead of taking shortcuts over uneven terrain.

Organisation of the Kraftfahrtruppe 1914

The following organisation of the German *Kraftfahrtruppe* is based on the general orders of 1913 and adapted for the later war years where necessary. It needs to be noted that, during the war years and with the steadily increasing number of available vehicles, details such as numbers of equipment and supplies changed continually. Additionally, the quantity of impressed civilian and newly produced vehicles grew exponentially.

The *Inspektion des Kraftfahrwesens* (I.d.K., or inspectorate general of army motorisation) in Berlin was the highest authority for the purchase, replacement, repair and equipment of any *Kraftfahrzeug* (motor vehicle). Later in the war it was also responsible for training vehicle crews. Subordinated to the I.d.K. were:

- *Ersatzabteilungen* (replacement training reserve) of the *Kraftfahrbataillon* (motor vehicle battalion)
- *Immobile-Kraftwagen-Depots* (J.K.D., or immobile reserve vehicle depots) and *Hilfs-Depots* (auxiliary depots) that were located near to and connected with motor vehicle production factories.

In the *Ersatzheer* (reserve training army), all matters of motor vehicles were dealt with by the *Feldkraftfahrchef* (chief of field motor vehicles). In the regular army the *Kommandeur der Kraftfahrtruppen* (commander-in-chief of motor transport troops), located at the high command of an army, was in command of:

- *Armee-Kraftwagen-Kolonnen* (army-level motor vehicle columns)
- *Divisions-Kraftwagen-Kolonnen* (division-level motor vehicle columns)
- *Armee Kraftwagenparks* (army-level motor parks)
- *Postkraftwagenparks* (field mail motor parks)
- *Armee-Fußartillerie-Kraftzug-Parks* (army-level foot artillery prime-mover parks)
- *Sanitätskraftwagenparks* (ambulance motor parks)
- *Kraftradfahrerabteilungen* (motorcycle sections)
- *Kraftwagenstaffeln* (motor vehicle squadrons)
- *Dienststellenfahrzeuge* (administrative authority vehicles)
- *Einzelfahrer* (independent motor vehicles)

Kraftfahrtruppe chain-of-command 1913-14:

- *Etappen-Inspekteur der Kraftfahrtruppen* (inspector-general of army motor transport troops in the rear communications area)

- *Kommandeure der Kraftfahrtruppen einer Armee* (commanders of army motor transport troops at field army levels)
- *Etappen-Kraftwagenkolonnen* (rear communications area motor vehicle columns)
- *Kavallerie-Lastkraftwagenkolonnen* (truck columns of cavalry units)
- *Sanitäts-Kraftfahrformationen* (motor ambulance formations) subdivided into
  - *Lastkraftwagenkolonne* (truck column) and
  - *Krankenkraftwagenkolonne (*ambulance column), both subordinated to *Etappensanitätsdepots* (rear communications area medical depots)
- *Etappen-Kraftwagenparks* (rear communications area motor parks)
- *Kraftwagenparks in Festungen* (motor parks of fortifications).

In addition to these units, so-called *Immobile Kraftwagenformationen* (immobile reserve motor vehicle formations) close to the frontlines were supplying frontline units from bases in Germany.

Each *Armee* (field army) fielded a number of *Etappen-Kraftwagen-Kolonnen* (rear communications area motor vehicle columns) equipped with trucks to provide it with supplies:

1. Armee	*18 Kolonnen*
2. Armee	*18 Kolonnen*
3. Armee	*9 Kolonnen*
4. Armee	*5 Kolonnen*
5. Armee	*5 Kolonnen*
6. Armee	*8 Kolonnen*
7. Armee	*3 Kolonnen*
8. Armee	none

Added to these were two *Landwehr-Korps*, one *Kavallerie-Lastwagen-Kolonne* with each of the eleven *Kavallerie Divisionen*, and 16 *Kraftwagen-Kolonnen für Mannschaftstransport* (transport of personnel) with the *Jäger Bataillone* (light rifle battalions).

The Commander-in-Chief at the Field Army Level

The *Kommandeur der Kraftfahrtruppen einer Armee* (commander-in-chief of motor transport at field army level) was directly subordinated to the *Etappen-Inspekteur* (inspector rear communications area) and he organised all motor corps tasks at the level of an army. He was the commander of the *Etappen-Kraftfahrformationen* and directly subordinated to him were:

- *Etappen-Kraftwagenkolonnen* (rear communications area motor vehicle columns)
- *Etappen-Kraftwagenpark* (rear communications area motor vehicle parks) with repair facilities
- *Tankstellen* (fuel stations) operated by the latter.

The *Kommandeur der Kraftfahrtruppen einer Armee* had under his command all motor vehicles of frontline (*Armee*) and rear communications area (*Etappe*) units of the army, and he was ultimately responsible for their technical condition. He was in direct contact with his superior, the *Etappen-Inspekteur*, to carry out his orders but also to make proposals in regard to potential improvements in the running of motor vehicle units. The *Kommandeur* cooperated, for example, with the *Etappenintendant* (advisor of rear communications area units) and the *Kommandeur des Etappen-Munitionswesens* (commander rear communications area ammunition supplies) to organise tasks, movements and relocation of motorised units such as motor vehicle columns and motor vehicle depots. Also under his supervision was reconnaissance of potential roads or bridges that could be used for motor vehicles.

The *Kommandeur* stayed permanently in touch with units and fuel stations under his command by using dispatch riders based on motorcycles and passenger cars. He was responsible for replacements in personnel, vehicles, tools, spare parts and other machinery that were necessary to keep motorised units under his command efficient. He was also responsible for fuel supply, and was the point of contact for all non-motorised units at the army level, particularly *Kavallerie-Divisionen* (cavalry divisions) and for the supply of any type of fuel, including hydrogen for the balloon corps. He could order supplies for the army and independent units under his command from *Kraftwagendepots* (motor vehicle supply depots) directly, either by special order or under wartime conditions. He also signed *Militär-Fahrberechtigungsscheine* (military driver licences).

A particular interesting capacity of the *Kommandeur der Kraftfahrtruppen einer Armee* was his authority to confiscate all civilian or enemy motor vehicles and all combustible fuels in the area of responsibility of his army level to boost motorisation of German units.

Tasks of the Rear Communications Area Motor Park

The *Etappen-Kraftwagenpark* (rear communications area motor park) was responsible for:

- replacing personnel of the *Kraftfahrformationen*
- storing replacement motor vehicles of all types
- repairing vehicles that could not be repaired at the column level
- collecting all captured and impressed civilian motor vehicles and combustible fuels commandeered by German forces
- supplying the field army and *Kraftwagenkolonnen* with fuels, spare parts and tyres
- operating fuel stations

The *Etappen-Kraftwagenpark* was preferably located in or next to suitable buildings such as factories. It was to be set up in a way that could be quickly dismantled and thus follow fighting forces towards the frontline. For this purpose the *Parkführer* (motor park commander) could keep non-essential equipment loaded on railway wagons or other means of transport.

While on campaign, the *Parkführer* had to keep vehicles of his motor park in running condition, replace vehicles beyond repair and train personnel and drivers for his unit. In addition, he was responsible for ample spare parts and repair tool supply to operate two mobile independent workshops.

The *Etappen-Kraftwagenpark* had its own *Betriebsstoffnachschübe in Eisenbahnwagen* (railroad wagons with enough supplies for a campaign of eight days [97 tonnes of petrol, 83 tonnes of benzol, 22 tonnes of light gasoline, 8 tonnes of oil, 1 tonne of grease and 5 tonnes of carbide]). This figure was significantly larger in later wartime years. Additionally, combustible fuels confiscated in occupied territories were added. The park also featured a *Schwere Fahrbare Werkstatt* (heavy mobile field workshop) on two *Armeelastzüge*, each equipped for all types of repairs.

Kraftfahrtruppe Re-Organisation 1915

As of March 1915, it was decided to reorganise the *Kraftfahrwesen* and adapt it from the peacetime idea of a "fast campaign resulting in victory by Christmas" to the reality of trench warfare e.g.:

- creation of *Kraftwagen-Überwachungsstellen* (motor vehicle control authorities) to re-establish order on the streets and "to make an end of unsupervised journeys"
- Introducing *Fleisch-Kraftwagen-Kolonnen* (meat transport columns) with the reserve corps

(the army corps already had these from September 1914) to better feed troops

- subordinating truck columns of *Jäger* (light infantry) and *Kavallerie* units to the *Etappe*, with exceptions permitted
- creation of *Etappen-Sanitäts-Kraftwagen-Abteilungen* (rear communications area ambulance vehicle detachments) by concentrating ambulances from the previous army level
- Putting the *Kraftradfahrer-Abteilungen* (motorcycle detachments) under the sole control of the *Etappen-Inspekteure* (inspectors of the rear communications area).
- equipping the *Post-Kraftwagen-Parks* (field mail service motor parks) with eight vehicles each
- relocating vehicles of the *Allgemeines Deutsches Automobilkorps* (German automobile corps) to medical units for the purpose of transporting personnel and the wounded, if required
- removal of all vehicles that were not by order part of frontline formation organisations of battle (e.g. high-ranking officers' personal limousines or locally impressed foreign vehicles) and putting them under *Etappe-Kraftwagenpark* control.

In the autumn of 1915, the *Fleisch-Kraftwagen-Kolonnen* were disbanded again. Instead, a *Korps-Kraftwagen-Kolonne* (corps-level motor vehicle supply column) was established to now handle all types of supplies. All independent divisions received a *Divisions-Kraftwagen-Kolonne*, and each *Etappen-Inspektion* received (in addition to the *Etappen-Kraftwagen-Kolonne*) an additional *Etappen-Kraftwagen-Staffel* (squadron) with three columns each. Around the same time, the *General-Gouvernement Warschau* (Warsaw) was reorganised after the *General-Gouvernement Belgien* role model.

Kraftfahrtruppe Organisational Changes in 1916

With tactical developments on the battlefield changing rapidly, from 1916 another reorganisation of the *Kraftfahrtruppe* was implemented. While previously the focus of motor vehicle transport was in the rear area of communications, it now became clear that it needed to be moved closer to the frontlines. The *Armee* itself was to decide how to run operations in regards to motor vehicles, rather than rear echelon supply commands.

On 05 November 1916 the *Leitung des Deutschen Kraftfahrwesens in der Türkei* (German Military Transport Command) was created in Turkey, and it was responsible for also supporting German forces in Iraq, Syria and Palestine.

The 58 *Korps-Kraftwagen-Kolonnen* were reorganised into *Divisions-Kraftwagen-Kolonnen* in December 1916. That measure increased the number of *Divisons-Kraftwagen-Kolonnen* to a total of 236 (numbered 530-800).

On 15 December 1916, the *Oberste Heeresleitung* (army high command) promoted the *Feldkraftfahrchef im Großen Hauptquartier* (chief of motor vehicle operations at the supreme headquarters) to the rank of *Brigadekommandeur* and put him in charge of *Oberste Leitung des Kraftfahrwesens im Feld und in der Heimat* (commander-inchief of the motor transport service in the field and in the homeland). This new role subordinated to him the *Inspektion der Kraftfahrtruppen* (inspectorate of the motor transport troops) in the fatherland and put him in overall control.

Kraftfahrtruppe Organisational Changes in 1917

All the 1916 measures created a better-functioning military transport service, yet the lack of available vehicles made it impossible to create a vehicle reserve even by early 1917.

As of January 1917, the *Militärverwaltung Rumänien* (Military Administration for Romania) followed the *General-Gouvernement Belgien* in its organisation of motor vehicle transport.

In June 1917 the *Kraftwagen-Staffeln* hitherto under *Etappe* command were now put under *Armeetruppe* command and issued with sequential numbers, though they kept their tasks such as training, replacement vehicle supply, fuel supply and so forth. Each *Armee-Kraftwagen-Staffel* was subdivided into three sections, each with the following equipment:

- 10 light trucks
- 10 medium trucks
- 30 heavy trucks
- 6-10 motorised harvester ploughs in *Kraftpflug-Abteilungen*

At around the same time, the *Postkraftwagen-Parks* field mail motor parks were disbanded and integrated into *Armee-Kraftwagen-Staffeln*. Another unit to be put under *Armeegruppe* control was the military ambulance service, then redesignated *Sanitäts-Kraftwagen-Abteilungen* (ambulance vehicle detachments).

The number of *Armee-Fußartillerie-Kraftzug-Parks* (army foot artillery prime mover motor parks) was increased from seven to ten.

Kraftfahrtruppe Organisational Changes in 1918

The new tactics of *Sturmtruppen* and local assaults made it necessary to boost transport capacities to new dimensions. To cope, the Army High Command converted the following additional units to *Armee-Kraftwagen-Kolonnen* for ammunition transport under direct army-level command:

°	9	*Jäger-Munitions-Kraftwagen-Kolonnen*
°	52	*Kavallerie-Munitions-Kraftwagen-Kolonnen*
°	102	*Etappen-Munitions-Kraftwagen-Kolonnen*
°	32	*Fußartillerie-Munitions-Kraftwagen-Kolonnen*

This measure culminated into a total of 319 *Armee-Kraftwagen-Kolonnen zur besonderen Verfügung* (special army transport columns), with the numbering ranging from 1 to 384.

Added to these were the *Raupen-Kolonnen* (tracked transport columns) 1111-1122 equipped with *Überlandwagen* and *Orion-Wagen* tracked lorries.

In April 1918, two *Feldrekrutendepots der Kraftfahrtruppen* were created to recruit new personnel for the motor transport forces.

Also in 1918 arose the problem of equipping artillery units (hitherto horse-drawn) with motor vehicles. In a maximum effort based on the weak resources available that late in the war, one *Kraftwagen-Staffel* was issued to each of the six *Feldartillerie-Regimenter* and five *Fußartillerie-Bataillone*.

As for *Kraftwagen-Depots in der Heimat* (motor vehicle depots in the homeland), initially there were eight of them, but this number later increased to 13. In 1918 they were renamed *Kraftfahrzeug-Ersatz-Parks* (replacement motor vehicle parks).

End of the War

At the end of the war on 11 November 1918 the Imperial German Army still possessed approx. 40,200 motor vehicles out of a total of 69,977 officially delivered to the army (plus impressed vehicles). Among them approx. 25,000 trucks out of 38,087 delivered.

Around 9,000 trucks were still fully operational and 5,000 of these were taken over by the Allied Armies. Yet many German units followed their orders and destroyed their entire motor pools before falling into the victors' hands. A number of vehicles still operational were driven home to Germany by their operators after the armistice, but not all of them completed the journey and were left behind broken down in France or Belgium and subsequently absorbed by the local civilian population.

Some of the captured trucks were sold by the Allies to countries such as Poland, Latvia, Estonia and Lithuania. Several thousand were sold to German dealers and soldiered on in civilian, police and *Reichswehr* service well into the early 1920s.

Today, barely any German truck of the World War One era is on display in museums yet some survived in private collections.

01.1. Heeresmotorisierung - Daten und Fakten
Army Motorisation - Facts and Figures

Top Speeds and Fuel Consumption
Average speeds achieved on level roads (left column: in kilometres per hour / right column: daily covered distances, hard roads to mountainous terrain in kilometres) of German motor vehicles of as of 1913:

°	*Personenkraftwagen*	50	300-150
°	*Kleinautos*	40	250-100
°	*Kraftomnibusse*	30	150-80
°	*Armeelastzüge*	13-14	100-60
°	*Lastkraftwagen*	14	100-60
°	*Kavallerie-Lastkraftwagen*	20	125-75
°	*Leichte Lastkraftwagen*	30-35	175-100
°	*Krankenkraftwagen*	35	200-100
°	*Krafträder*	40	250-100
°	*Kolonnen*	11-18	125-60

Fuel consumption in litres of petrol or benzol (left column) and resulting average road ranges in kilometres (right column) as of 1913:

°	*Personenkraftwagen*	0.40	250
°	*Kleinautos*	0.22	300
°	*Kraftomnibusse*	0.70	200
°	*Armeelastzüge*	1.50	250
°	*Lastkraftwagen*	1.00	250
°	*Kavallerie-Lastkraftwagen*	0.40	200
°	*Leichte Lastkraftwagen*	0.40	200
°	*Krankenkraftwagen*	0.40	200
°	*Krafträder*	0.10	200

Top speeds (left column: in kilometres per hour on level roads) and fuel consumption (right column: in litres per 100 kilometres) of German motor vehicles as of 1917:

°	*Krafträder*	40	7
°	*Kleinautos* 8 to 10 *Steuer-PS* *	40	10-15
°	*Personenkraftwagen* approx. 16 *Steuer-PS*	43	16-22
°	*Krankenkraftwagen*	30	22-24
°	*Leichte Lastkraftwagen* (1.5-ton to 2-ton)	32	26-32
°	*Kraftomnibusse*	22	36
°	*Lastkraftwagen* (3-ton, 35hp)	20	38
°	*Armeelastzüge*	14	50 (68 with trailer)

Note that engines of that time also needed quite an amount of oil. This ranged from 0.2 litre per 100km for a motorcycle, about 1 litre for a passenger car, 1.5-2 litres for a truck and 3 litres for an *Armeelastzug* with trailer.
Permitted top speeds were often limited to 10-16km/h due to bad road conditions. Note that vehicles with solid rubber tyres could only move at 50% speed while full-steel tired vehicles only came to 20%.

Vehicle Markings
As most vehicles used by the army in the pre-war period were only used during exercises and trial runs, and later returned to their civilian owners, markings on these vehicles were virtually non-existent.

This approach changed with the outbreak of war. In wartime the regulations concerning markings on an army vehicle were ordered by the individual federal state. As of 1917, the markings included:

° *Reichsgebiet* (German Reich):
Nummernschild (registration plate or number plate) made of sheet metal either with a state registration or '*M.K*' for *Militär-Kraftwagen* (military motor vehicle) plus a district designation in Roman figures and a vehicle number in Arabic figures, on the front and rear (e.g. '*M.K. III 101*' military motor vehicle based in the district of Berlin, vehicle number 101)

° *Feldheer* (field army outside Germany):
Fahrzeug-Kennzeichen (tactical registration) with a combination of Roman and Latin letters and figures identifying the *Einheit/Verband* (unit), e.g. '*III 118*' for 3rd Army, vehicle number 118.

° *Formationsabzeichen* (unit designations) were to be applied to the bonnet and / or sides of the cargo bay. Notably there was no official order how the abbreviations of the unit designations were to be. In consequence units did as they saw fit using Roman and Arabic letters and figures. For more details see remarks in the captions.

° *Wappen des Bundestaates* (crests of the federal state) were to be applied to both sides of cargo bays.

Vehicle Documents
To be carried on duty with the vehicle:

° *Kraftwagenausweis* (motor vehicle identification document)
° *Militärführerschein* (military driver's licence)
° *Ergänzungsausweis* (auxiliary document, only if no officer was inside the vehicle)

All these regulations were supervised and controlled by *Kraftwagenüberwachungsstellen* (motor vehicle control authorities).

Military driving licence classes

°	Klasse 1	*Kraftrad* motorcycle
°	Klasse 2	*Kraftwagen über 2,5 t Eigengewicht Lastwagen* motor vehicle with a gross vehicle weight of over 2 tonnes, trucks
°	Klasse 3 a	*Kraftwagen unter 2,5 t Eigengewicht und unter 10 Brems-PS Depeschenwagen* motor vehicle under 2.5-tonne gross vehicle weight and under 10 brake horsepower, dispatch car
°	Klasse 3 b	*Kraftwagen unter 2,5 t Eigengewicht und über 10 Brems-PS Personenwagen und leichte Lastkraftwagen* motor vehicle under 2.5-tonne gross vehicle weight and more than 10 brake horsepower, passenger car and light truck.

---

* *Steuer-PS*, or taxation horse power are a measurement of vehicle power based on which the vehicle tax is calculated. This figure is always lower than the maximum output of the engine (e.g. 18/24hp). In this publication only the maximum hp are given in technical descriptions.

01.2. Heeresmotorisierung - Lastkraftwagen
Army Motorisation - Trucks

A War of Numbers

In the last pre-war year, 1913, Germany had an overall output in truck production of only 1,850. Yet, from 1915 the annual requirement of military trucks rose to 10,000 vehicles. To cope with this demand, all truck manufacturers were kept open and they manufactured at full capacity. The peak in German truck production was reached in 1916 with 15,000 vehicles. Yet raw-material shortages reduced the quality of production significantly – for example, by replacing steel with pig iron, bronze with low-grade steel, and solid rubber tyres with wood-steel designs.

During the entire World War One, Germany produced a total of about 38,000 trucks for the army, about 25,000 of these were still operational after the armistice in 1918.

While truck manufacturers remained in business throughout the war, most carmakers were not seen as essential to the war effort, mostly due to the fact that the entire requirement could be filled with impressed civilian vehicles. As a consequence, the production of limousines ground almost entirely to a halt, and the production of small passenger cars was carried on at a very limited level, reduced to those types with either military-service qualities, and transport to serve the civilian population in the homeland, e.g. delivery vans, postal service trucks and ambulances.

As with many other nations unwilling or unable to purchase large fleets of military-grade trucks in the first decade of the 20th century, Germany relied on the *Subventions-LKW* (subsidy truck) scheme. This basically meant that if one was a civilian who wanted to purchase a truck but did not have the financial resources to do so, one could go the military authorities and apply for a truck. The German military had a list of truck makers and truck types powerful enough for military use based on the *Übungsfahrten* trial runs. The scheme also had the advantage that the army with its limited funds could actually get trucks and that the newest types would always be available. If one picked one of these, the military took over a large portion of the purchase price (4,000-5,000 Marks) and paid an annual maintenance fee of 1,000 Marks over a period of five years to keep the vehicle *kriegsbrauchbar* (fit for war), under the proviso that the vehicle had to be surrendered to the army in case of a national emergency or general mobilisation.

Yet the primary early wartime source for motor vehicles was not subsidy trucks but impressed vehicles. As of January 1914, the army listed, for example, a total of 61,000 passenger cars in private possession in Germany. Based on the *Aushebungsgesetz* (General Mobilisation Law), they were earmarked to be handed over to the military regardless of their actual combat value, type or technical condition. From September 1914 German authorities expanded their confiscation procedures to vehicles found in the occupied territories of Belgium and France.

The general idea was that the motor vehicle would be the link between railroads that handled bulk deliveries over long distances, and horse-drawn carts at the unit level that delivered right up to the frontline. Motor vehicles were furthermore split up into three categories: *Personenbeförderung* (transport of personnel), *Lastenbeförderung* (cargo transport) and *Fahrzeuge für Sonderzwecke* (special-purpose vehicles) e.g. *Verwundetentransport* (transport of wounded), *Scheinwerfer-Wagen* (searchlight trucks) and *Werkstatt-Wagen* (workshop trucks).

Lastkraftwagen Types

The mainstays of Imperial German motor transport were trucks, subsidy types, impressed civilian types and militarised commercial designs. In accordance with their payload and size, the trucks can be split up into subcategories:

° The *Kleiner Schnellwagen* (small fast truck) with a payload of 1.5 tonnes was similar in design to civilian delivery vans. It was mostly used to transport ammunition and food supplies to the frontlines. Most were fitted with a *Plane/Pritsche* tarpaulin-covered cargo bay, while others had an enclosed box body. Due to their tasks and the complete absence of any armour protection when close to where the fighting was happening, the two-man crew of the *Fahrer* (driver) and *Begleiter* (co-driver) lived a dangerous life.

° The *Kavalleriewagen* (cavalry truck) was a solo vehicle, had a payload of around 3 tonnes, and it was equally fast. It was designed to transport horse fodder, ammunition and other important supplies.

° The biggest class was the *Großer Lastwagen* (heavy truck) in the payload range of 4 to 5 tonnes. Combined with a trailer, the payload could be increased to 10 tonnes. The heavy trucks were the least off-road-capable means of motor transport, and thus mostly employed to haul bulk goods from railroad stations to distribution warehouses. They also hauled overweight goods such as railroad tracks and building materials in general. Fuel and water tankers were mostly based on a heavy truck chassis. Due to the technical limitations of rubber tyres before the 1920s, these heavy trucks were equipped with solid rubber-rimmed steel wheels and were powered by a chain drive.

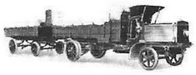
Aside from the cargo trucks, there were, across all mentioned payload ranges and types, specialist trucks such as *Werkstattwagen* (field workshops), *Magazinwagen* (spare parts truck), *Fleischwagen* (meat transporter), *Fernsprechwagen* (field telephone / radio truck), *Feuerspritze* (fire engine), *Feldpostwagen* (field mail service truck) and *Küchenwagen* (field kitchen truck), all of which had specialised interior equipment.

The Supply Chain

The *Etappen-Kraftwagen-Kolonnen* (*E.K.K.*, rear area of communications motor vehicle columns) supplied the army with all necessary supplies, in particular ammunition and food. Such a column had the capacity of two horse-drawn infantry or artillery columns, but on roads it was about three times as fast as these. If requested, the *Etappen-Kraftwagen-Kolonnen* could be diverted from their army-level tasks to supply cavalry divisions, independent divisions or corps. In siege operations they were responsible for transporting special siege equipment to the fortress in question. Each *Kolonne* was numbered sequentially, e.g. *Etappen-Kraftwagen-Kolonne Nummer 30*.

The responsibility for the load of the column rested with the *Kolonnenführer* (column leader); this included maximum load limits that must not be exceeded, and weight distribution of the load on the cargo decks. Before leaving, the column had to be issued with the necessary food supplies for the crews. All details of loads and equipment had to be listed in official documents, and potential losses in transit were to be listed immediately.

In the case of transporting ammunition, the load had to be taken over directly from railroad supply trains at railroad stations wherever possible, and transported to field ammunition depots. During combat situations, the columns could be ordered to deliver ammunition directly to frontline units in their artillery positions. Ammunition transport in general had to, during loading, be supervised by an officer and it was necessary that *Feuerwerkspersonal* (explosive ordnance personnel) be issued to the truck column in case the load had to be repacked or handled in any way other than loading or unloading.



The Marching Column

When a marching column was formed out of motor vehicles, their technical condition, average top speed, road conditions, time of year and expected weather during the operation had to be taken into consideration. During the road march, trucks of a column had to observe an ordered distance between individual vehicles. This distance was dictated by road conditions, speed and resulting braking capacity of the trucks and weather. Under routine dry conditions on hard roads, the distance was normally 10-12m. In hilly conditions and particular steep climbs, it might be required that each truck cross the obstacle individually and then gather the column again on the other side. Causes for larger distances in columns could be hills, dust or ice. In case the distance between trucks of the column became too large, the leading vehicles had to slow down up to the point that the last truck was in position again. The last vehicle in the column was normally the *Kraftomnibus* (bus).

The column had to leave enough space on the road so that passenger cars on dispatch rider duty were capable of passing.

As of 1917, three types of military supply columns were differentiated:

- *Leichte Kraftwagen-Kolonne*
  Light column with trucks in the 1-2-ton payload range
- *Divisions-Kraftwagen-Kolonne*
  Division-level column with solo trucks in the 3-ton payload range
- *Armee-Kraftwagen-Kolonne*
  Army-level column with trucks in the 3-ton and over-4-ton payload range, plus trailers in the minimum 2-ton range

Kavallerie-Lastkraftwagenkolonnen performed the delivery of supplies such as provisions or ammunition to cavalry divisions, and they were directly subordinate to commanders of these divisions. Their primary load was fodder for horses, followed by food for military personnel and ammunition, the latter from depots of the army corps or other units that the cavalry were attached to. Daily routines of cavalry truck columns were otherwise identical to the *Etappen-Kraftwagen-Kolonnen*.

Besondere Kraftfahrformationen (special motor vehicle formations) carried out special tasks. This included, for example, delivery of baking supplies by *Feldbäckerei-Kolonnen* (field bakery columns).

Each column was ideally staffed by the *Kolonnenoffizier* (column officer) who supported the *Kolonnenführer* (column commander) in his tasks, and took over responsibility in case the *Kolonnenführer* was absent. In addition, he could be sent out by his superior to carry out reconnaissance duties ahead of the column. Further soldiers supporting the *Kolonnenführer* were the *Unterzahlmeister* (junior paymaster) who organised all financial work for the column and was responsible for the *Kasse* (cash register); a *Feldwebel* (sergeant) who was in charge of accommodation, armaments, uniforms and food supplies of vehicle crews; and the *Unteroffiziere* (junior non-commissioned officers) who were responsible for their vehicle groups, trucks and crews inside the column, their marching order, observation of the column's speed and ensuring the column did not lose contact with other marching groups in general. The first group's *Unteroffizier* travelled on the first truck of the column, and was responsible for the top speed limit being observed and that the column stayed together and no one was left behind. The second group's *Unteroffizier* travelled on a vehicle of his group and led it, while the third group's *Unteroffizier* travelled on the last truck of the column. Another *Unteroffizier* served with the *Leichte Fahrbare Werkstatt* (light mobile field workshop with carpenters, mechanics, blacksmiths, saddlers and other specialists) of the column, and he was responsible for setting up a maintenance and repair point should the necessity arise. He was also responsible for stocks of spare parts and the fuel of the column. On the march he travelled on the vehicle that carried the field workshop. All other *Unteroffiziere* of the column travelled inside an omnibus, and they were ordered to stay with trucks that had to drop out of the column for any reason and to carry out general disciplinary duties.

Each *Kraftwagen* (truck) had a *Wagenführer* (driver / commander) and a *Begleitmann* (assistant driver). *Unteroffiziere* and *Mannschaften* (ordinary soldiers) who were not part of the truck crews were transported in a *Kraftomnibus* (motorised bus) that followed the column.

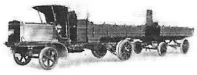
For road marches of motor vehicle columns, there was a standing order that these had to be independent from horse-drawn columns or infantry columns marching on foot. The reason for this order was that motor vehicle engines had a tendency to overheat when being driven in low gear and at slow speed for extended periods of time.

As the shoulders of hard roads were mostly soft and could cause the tyres to sink in and thus cause damage, it was ordered that marching infantry columns, horse-drawn columns and empty trucks had to make way when a loaded truck or truck column was approaching.

In case the column had to be operational over several days, a *Kolonnenbewegungs-Übersicht* (column road march plan) had to be established. If required, the motor vehicle crews could permanently drive their vehicles for ten hours every day. To this time were added maintenance duties and the time required for cleaning the vehicle after it parked. Enough time for crew rest had to be considered from the start. Loading in general required up to three hours, while unloading required up to two hours. The *Kolonnenführer* also had to plan the breaks of the column, including times to feed the crews and accommodation during the night. In addition, he had to take care of fuel supply. The marching speed for the column had to be planned by taking the road conditions and weather into consideration. The overall duration of the daily march time also had to include stops for slow trucks to catch up, time at the end of the daily march for engines to cool down, and testing of the brakes. In case of breakdowns, a decision had to be made if repairs were advisable on the spot or if the cargo was to be trans-loaded and carried on another vehicle of the column.

During marching column duty, and in the absence of any vehicle-borne radio equipment at that time, signals were given either by shouting or by hand. As a result, eye contact between crews was essential to pass on orders along a column that could stretch out over several kilometres:

- *Antreten - An die Fahrzeuge*, lifting an arm vertically - crews take up position in front of their vehicles
- *Aufsitzen*, circling of the right arm to the side – engine is started, the crew takes its designated position on the truck. The crew sits still in orderly fashion, eyes forward, hands and fingers tight and on the knees (drivers on the steering wheel)
- *Marsch*, pushing the right arm up and down – the first truck starts to move, and the others follow at distances of between 10m and 12m
- *Langsam fahren*, slow lifting and lowering of the arm to the side - drive slowly
- *Schneller fahren*, multiple repetition of the *Marsch* signal - drive faster
- *Rechts oder links heranfahren*, pushing the arm out of the truck in the respective direction- stopping on the left or right of the road
- *Einbiegen*, holding the arm in the desired direction – changing direction
- *Halt*, pushing the arm vertically into the air – halting the truck
- *Abstellen*, a bent arm is held over the head – stopping the engine
- *Absitzen*, the same signal as for *Halt* but only with parked vehicles – dismounting of crews



If a mobile field workshop truck was part of the column, it drove at the end to deal with broken-down trucks. Second to last (or last when operating without workshop support) was the bus with soldiers of the unit who were not driving trucks. When closing in to the final destination or an overnight stay, the bus passed the column to arrive first and set up camp. In case the chosen road had been reconnoitred and was in very bad condition, a forward party was tasked with levelling out the most dangerous parts such as bomb craters to grant the column safe passage.

In case the road was extremely slippery, sand was put under the powered wheels when starting. For that purpose, *Sandkästen* (sandboxes) under trucks' load bays always had to be filled. On extreme grades or in wintertime, it was required to fit *Kettenarmierungen / Gleitschutzvorrichtungen* (non-skid chains) as a preventive measure. The chains were stored on each truck in a box with a perforated bottom (to allow melting water to escape) under the cargo bay. Upon reaching even, non-slippery ground again, the chains had to be removed immediately as they damaged the rubber on the wheels. Snow deeper than 400mm could not be negotiated without the help of horses.

Technical Work on Vehicles

Motor vehicles were seen as rare, expensive and technically demanding assets for military transport. As a result, a particularly heavy effort was demanded to maintain vehicles and keep them in pristine running order. After longer road marches, the crew was to be given ample time to do maintenance or to carry out smaller repairs if necessary. In addition, each vehicle was to be removed from driving duties for a full day every week to carry out inspections and repairs in daylight. When not in use, the vehicles were to be stored, if possible, in huts, barns or garages to protect them from the weather. In particular, they had to be protected against frost.

Before and after a drive, essential maintenance work was to be carried out by crews on their trucks. This included cleaning and lubricating the engine; tightening and refilling; replenishing fuels, oils and coolant water; filling the sandboxes (these improved grip under the tyres on slippery or icy surfaces); cleaning and lubricating the drive chains; and cleaning, testing and lubricating the brake and steering mechanisms. Other cleaning and maintenance duties were ordered when required by the *Kolonnenführer* or *Kolonnenoffizier.* During halts on road marches, the crew had to check the axles for overheating, and whether the engine or other components required additional lubrication.

Column Support Forces

Requisite space was essential for parking the column. The *Kolonnenführer* had to reconnoitre a potential *Parkplatz* (parking area) and organise the order in which the trucks had to enter it. The *Parkplatz* had to feature sufficient access both for entering and leaving, preferably solid ground, coolant water sources such as wells nearby, some distance to easily flammable objects such as wooden houses or haystacks, enough space to set up and operate the field workshop of the column, and the possibility of storing fuel. If the column also featured passenger cars, they needed to be parked close by.

The trucks were parked directly behind or next to each other at a minimum distance of 2m in between to allow crews to carry out their maintenance duties and to ease guarding of the *Parkplatz*. Immediately after all vehicles reached their parking destination, the *Parkplatz* was to be surrounded by rope and armed posts ordered to prevent non-column personnel from entering, and in particular to keep persons with lit cigarettes away from vehicles.

The field workshop was set up in close proximity to the trucks and, if possible, next to additional workspace such as huts or barns. When the *Feldschmiede* (field forge) was set up, special fire prevention measures had to be observed. In case the field workshop could not carry out the necessary repairs on the spot, the truck was to be sent back empty to the *Etappen-Kraftwagen-Park* and its cargo trans-loaded onto other vehicles.

Fuels were to be stored in a location where a fire could be prevented. This also had to be some distance from the trucks and in a lockable building, if possible. The fuel storage site had to be guarded and a 500mm deep trench had to be dug around the fuel dump to prevent fire hazards from leaking drums. Only authorised personnel could enter the fuel dump. The fuels were distributed to trucks preferably in daylight. When this was not possible, only electrical light or safety lamps were used.

After security was set up and maintenance done, the crews had to be provided with food, which was carried by the column so it could be independent. Only in case of emergencies under wartime conditions were crews allowed to take food or other supplies from the truck loads. Whenever possible, crews were to be accommodated in buildings close to the *Parkplatz*. If this were not possible, they had to set up accommodation in the cargo bays of their trucks. If ammunition was loaded, the accommodation of crews on trucks was forbidden. Open fire and smoking were generally not permitted next to vehicles.

Fuel Supply

Immobile Tankstellen (stationary fuel stations) were attached to all immobile motor parks. In addition, each corps and independent division was to have its own *Bewegliche Tankstelle* (mobile fuel station) that was to relocate with its own unit to new positions. Cavalry divisions were dependent on neighbouring corps or divisions. Mobile fuel stations had to drive back to the *Etappen-Kraftwagen-Park* or major storage locations for refuelling, yet they needed to make sure that one mobile fuel station was always operational.

A *Bewegliche Tankstelle* comprised one truck, one junior non-commissioned officer plus 3 tonnes of petrol in oil drums, 200kg of oil, 20kg of grease, 100kg of carbide, 20kg of cotton waste, 30kg of petroleum and 250kg of rubber spare parts. All this made up three days' worth of supplies for an army corps (this was a peacetime calculation; it was much more in later war years).

To operate fuel stations, filling equipment such as fuel pumps, buckets, funnels and lamps for night-time operations were available. All *Tankstellen* had to be marked by a sign or flag in yellow with black lettering reading "*Betriebsstoffe für Kraftfahrzeuge*" (operating supplies for motor vehicles). Each motor vehicle of the army was permitted to use these *Tankstellen*.

A Driver's Life

Compared with today's often lavishly equipped 'kings of the road', the job of a driver and assistant driver in World War One was quite a different one. The crew seats often were badly cushioned wooden benches, solid side doors were not fitted (to quickly escape from artillery fire or during an attack from the air) and this left the two crew exposed to the weather.

After a working day that regularly lasted about ten working hours, the crew was covered in a thick crust of dust, oil and mud, while being half-poisoned by engine fumes created by their truck or a whole column of trucks, and half-deaf from the un-dampened engine noise. Their black leather outfits blended into the colours of the road. They had to perform a daily routine of maintenance and smaller repairs after their ten-hour shift before they received a meagre meal and had to put up with lice-infested field quarters. In wintertime, problems doubled with the chance of catching pneumonia or suffering from hypothermia. Plus there was the ever-present chance of being hit by a bullet or shrapnel.

Organisation of an *Etappen-Kraftwagen-Kolonne*

°	2	*Offiziere*	(officers)
°	62	*Unteroffiziere und Mannschaften*	(non-commissioned officers and soldiers)
°	3	*Personenkraftwagen*	(passenger cars)
°	2	*Kleinautos*	(small passenger cars)
°	1	*Omnibus*	(bus)
°	2	*Lastkraftwagen*	(trucks)
		one of which served in the role	
		of *leichte Werkstatt*	(light workshop)
°	9	*Armeelastzüge*	(truck-trailer combinations)
		with a 4-ton payload for the truck and a 2-ton payload for the trailer	

Oorganisation of a *Kavallerie-Kraftwagen-Kolonne*

°	2	*Offiziere*	(officers)
°	55	*Unteroffiziere und Mannschaften*	(non-commissioned officers and soldiers)
°	4	*Personenkraftwagen*	(passenger cars)
°	2	*Kleinautos*	(small passenger cars)
°	12	*Kavallerie-Lastkraftwagen*	(solo trucks, preferably *Regel-Dreitonner)*
°	2	*Betriebstoff-Wagen*	(fuel drum carrying cargo trucks or fuel tankers)
°	1	*Leichte Feldwerkstatt*	(mobile light field workshop)

Organisation of a *Jäger-Kraftwagen-Kolonne*

°	20	*Unteroffiziere und Mannschaften*	(non-commissioned officers and soldiers)
°	10	*Lastkraftwagen*	(trucks)
		to transport a total of 280 soldiers	

01.3 Fahrzeugidentifikation / Vehicle identification

When it comes to German Army motorisation before and during World War One the researcher faces a dilemma. On one hand, the then new media of photography – in combination with the relaxed attitude of German military officials that photos could be taken behind the frontlines without any major restrictions, plus the popularity of photos printed in postcard size to send them home to the Fatherland – allows the devoted researcher of today to rely on a large pool of excellent visual documentation of soldiers and their equipment. On the other hand, manufacturers of that period did not bother to give their products posh marketing names, such as *Opel* did with its "*3-Tonner Opel Blitz*" two decades later. Instead, pre-1918 trucks received simple designations such as *Audi, 2 Tonnenwagen* (Audi, 2-ton vehicle) or *Dürkopp Fernsprechwagen* (Dürkopp signals van)*. Additionally, most truck makers developed one design on which variants were based. Differences between these variants were minimal, and only comprised a different payload range in combination with a more powerful engine and increased number of leaf springs in the suspension – all details that are indistinguishable externally, and consequently in photos. Furthermore, most truck makers of that period no longer exist, and their files are gone, while other archives have not survived the tides of time. Consequently, and opposed to the rather good archive situation for motorcycles**, proper identification of the trucks shown in this publication can in many cases not be achieved.

---

* see page 16 for more details

** see Tankograd Special 1009 Krafträder

01.4 Heereswagen / The Search for the Military Truck

Motorisation efforts of the Imperial German Army in the first two decades of the 20th century can only be understood by taking the very special background situation of the German Reich into consideration. First and foremost, the motor vehicle itself was a brand new invention back then. The technology was new and unproven, and passenger cars were a pastime for the rich. Yet the evolution of the motorcar in the first decade of the 20th century led to more and more sturdy designs that could also transport heavy goods and supplies. Soon the payload of internal combustion engine-powered vehicles would outrange those of horse-drawn wagons and steam traction engines, and so the commercial truck (lorry) was born.

The modern term for a commercial transport vehicle, the truck, had

only been around for little more than a decade. Trucks were costly, and almost annual leaps in improved technical components made the decision for one specific model for mass production an industrially high-risk operation. Truck manufacturers of the 1900-11 era put out only small numbers of trucks, mostly based on the same design and only adapted to various potential commercial applications by adjusting the payload and fitting a more, or less, powerful engine. With no solid ideas about future appeal and the market for the new "truck", production figures often remained in the two-digit or low three-digit range, and every year saw new designs and inventions to fathom customer interest.

The Imperial Germany Army showed interest in moving army supplies and, most importantly, artillery ammunition to the frontline in vast amounts and at a hitherto unknown pace. The first German intention of military motorisation had been the *Dampf-Straßenzug* (steam road train), heavily loaded steam-powered machines that would pull a large number of trailers to the front. Yet they turned out to be cumbersome at best; the huge machines were slow and had very limited capability on bad roads. They also needed a continuous supply of water and combustibles, things not expected to be available in a war zone. In addition, their price prevented large fleets from being purchased. Consequently the steam traction engine approach was stopped in late 1901.

In 1899 the first German officers had been trained in the "knowledge of engines", and in September that year the first commercial truck was obtained for military trials, a Daimler. Also in 1899 the first passenger cars were used on a *Kaisermanöver* Imperial army exercise. In 1900 the first substantial budget was set aside to purchase several combustion engine vehicles from different manufacturers to be used in military trials. In 1905 the army trucks participated in a civilian trial drive, as a novelty an army bus was also taking part. In 1907 the *Kriegsministerium* (Ministry of War) organized its very first own *Großer Transport-Versuch* (major transportation trial) with 22 trucks from 15 manufacturers participating alongside motorcycles, passenger cars and buses. Following this undertaking six manufacturers received the permission to offer subsidy trucks to the commercial market.

In 1908 the first official *Subventionsfahrt der Heeresverwaltung* (army trial run for subsidy trucks) was held.

The *Oberste Heeresleitung* (German Army High Command) had some visionaries in its ranks that saw the enormous potential that a motorised army would have on the logistical side, when compared to horse-drawn carts. Despite that perception, the envisioned motor vehicle troops were not recognised to their full potential by many high-ranking officers, and it took a lot of convincing to set aside military funds to find out the true worth of this new tool of the trade. While many see this as a mindset inclined towards the past with warfare involving horses and large bodies of infantry, it needs to be understood that this assumption was also shared by many civilians and motor vehicle manufacturers.

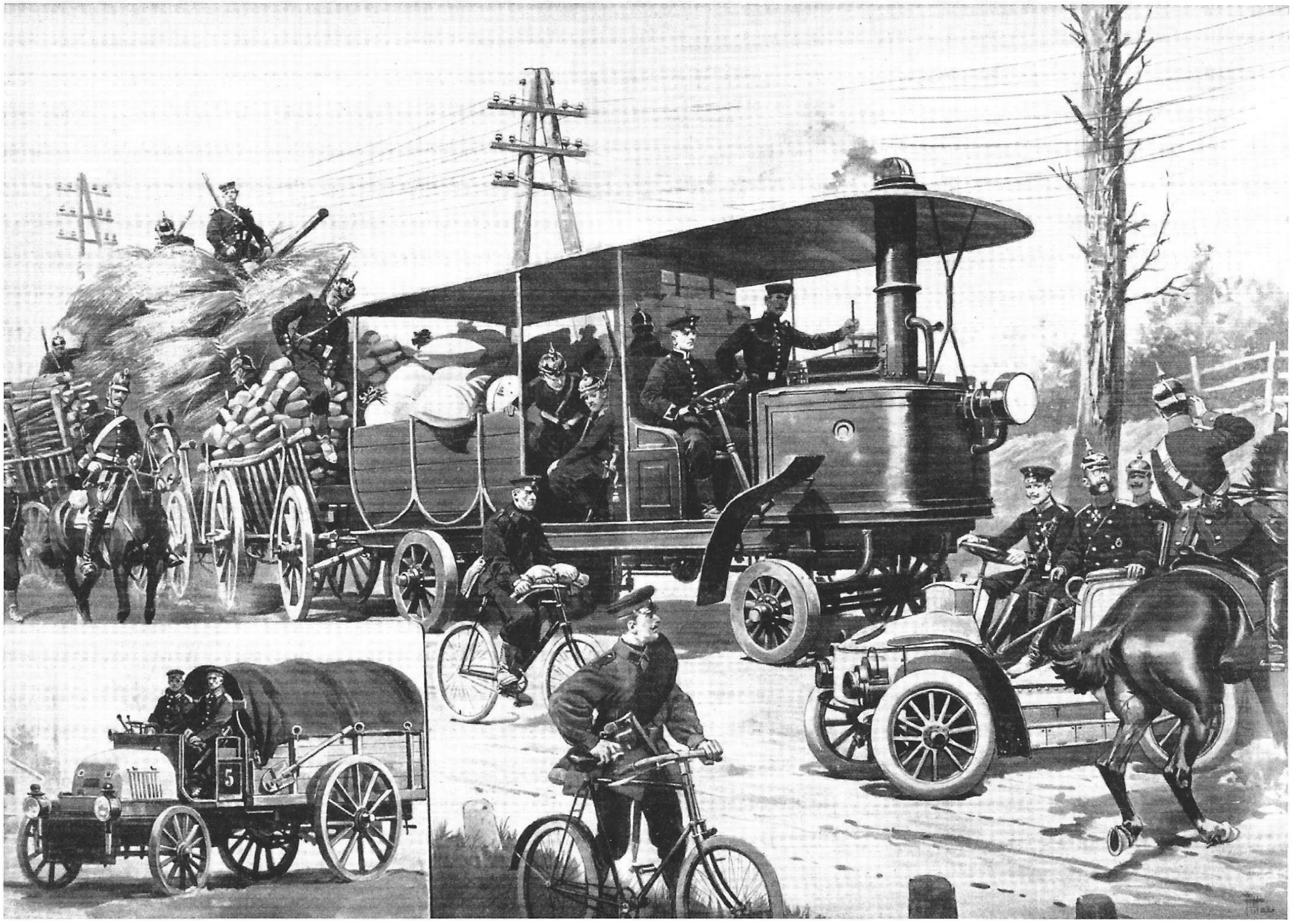
Introduction of the first vehicles large enough to haul a substantial amount of cargo, of being technically reliable enough for continued use, able to be easily handled by less experienced crews, and small enough to be used on all sorts of roads, was only marked by combustion engine-powered trucks from about 1907-08. These were seen as the right choice to equip entire army columns. This became necessary as, according to the arms instruction manual of 1908, the horse-drawn columns required to supply just one army corps stretched out on 14km of road. With the necessary safety distance between vehicles, this could even reach 24km or more. By using motor vehicles, the same payload could be transported by a much shorter column.

After having dropped the steam traction engine option, the new focus on motorisation of the German military can be split up into two major undertakings, the *Armeelastzug/Subventionswagen* and the *Heereslastwagen/Regellastwagen*, both of which will be explained in detail in the following chapters.

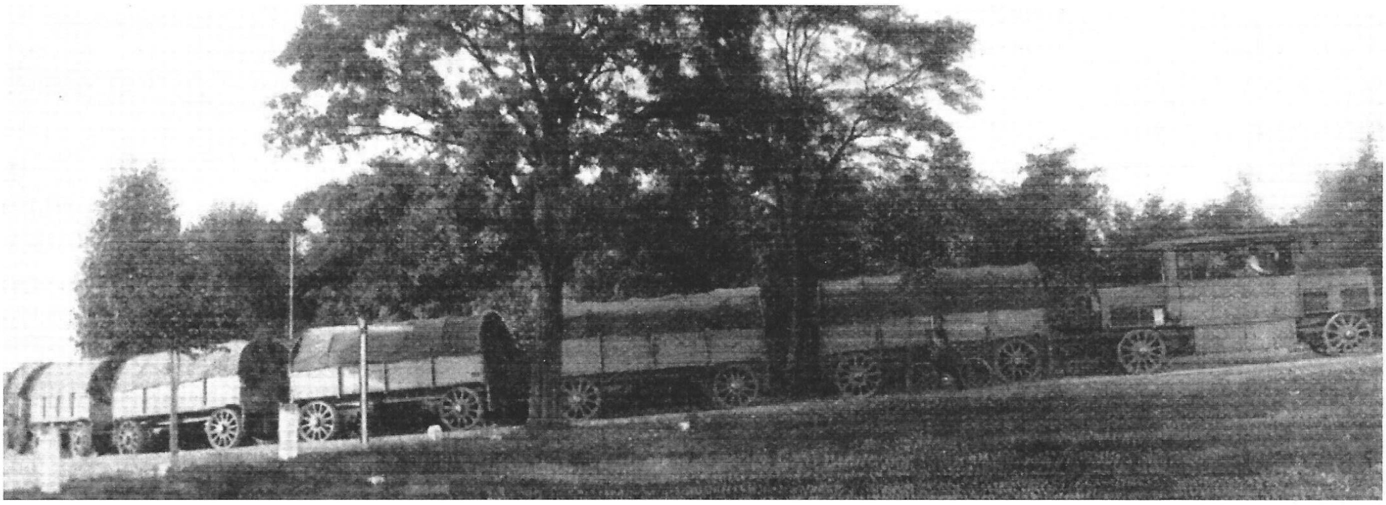
In regard to German trucks used in the Great War of 1914-18, it needs to be noted that about 95% of trucks used by the army were designed and built after 1912, earlier types were seen as outdated.

Terminology

Lastkraftwagen (LKW) ***Lastwagen*** ***Motorlastwagen***	**Truck, internal combustion-engine powered motor vehicle for the transport of supplies**
Armeelastzug ***Lastzug***	**Army Truck-trailer combination** **° Based on a two-axle truck of 4-ton payload towing a two-axle 2-ton payload trailer** **° By design to be used on hard roads only, without any off-road capabilities** **° Tested in *Vergleichsfahrten* army trials** **° Outdated when the Great War began, due to a crucial misconception of modern warfare (war in the trenches)**
Subventionswagen ***Lastzug mit Staatssubvention***	**Subsidy truck** **° Pre-war: An *Armeelastzug* financed in part by the military to be drafted into service should war break out** **° Wartime: Altered from *Armeelastzug* truck-trailer combinations to *Heereswagen* solo trucks that met basic military criteria**
Heereslastwagen ***Einheitswagen*** ***Militärlastwagen*** ***Kavallerie-Lastkraftwagen***	**Army truck** **° A solo truck design adapted to meet basic military requirements** **° Without any military major funding for completely new designs the manufacturers adopted their existing designs only minimally to meet army criteria** **° No single manufaturer had the necessary production means to launch a full series production for the required tens of thousands of vehicles. In consequence no fully standardised army truck ever came into existence.**
Kriegsbrauchbarer Lastwagen	**Civilian truck usable for military service without any major alterations**
Regellastwagen ***Regel-Dreitonner***	**Standardised (regulated) Army Truck** **° To achive at least basic outlines for the manifold designs of the various German truck makers, standardised criteria were formulated.**

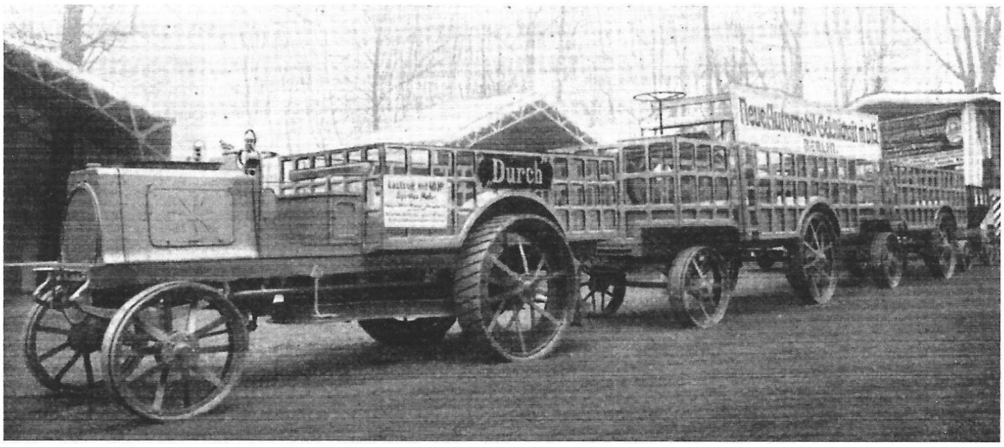


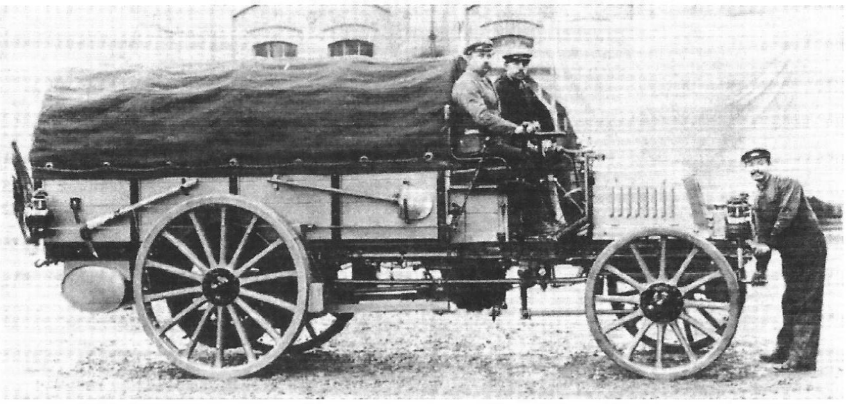
German Army motorisation of the future – an artist's impression from 1902. With development of the internal combustion-engined vehicle still in its infancy, and trucks with a high payload still futuristic, the *Dampf-Straßenzug* (steam engine road train) was seen as state of the art for army transport in the first years of the 20th century. This painting nicely illustrates the change of tides in road transport from horses to vehicles; in particular, note the early Daimler truck design in the inset that still resembles a horse-drawn carriage with an added motor at the front.
Credit: Jochen Vollert Collection



The *Straßenzug* road train was to consist of one steam-powered or combustion engine-powered prime mover, and to be used in connection with a large number of trailers. This example of the *Müller-Straßenzug-Gesellschaft* has a towed load of 30 to 60 tonnes, and it tows no less than six trailers. This consequently illustrates the problems of this approach very well – it was only usable on an excellent road system. This approach had nil practicality on bad roads, during a campaign abroad or off-road.
Credit: Jochen Vollert Collection

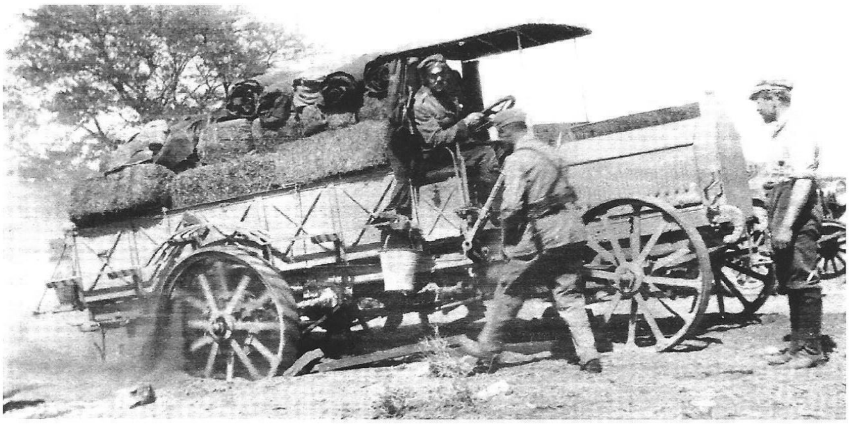
After having abandoned the use of steam traction road trains for military haulage, the Imperial German Army switched to testing combustion engine road trains for use in army supply columns. One of the earliest examples of a German military truck design for this application was this *40 PS NAG Militärlastzug* for the *Deutschafrikanische Schutztruppe* (German Colonial Defence Forces in Africa) on display during the *Deutsche Automobil Ausstellung* exhibition in 1903. Note the all-steel no-rim agricultural tractor wheels required to haul multiple trailers.
Credit: Jochen Vollert Collection

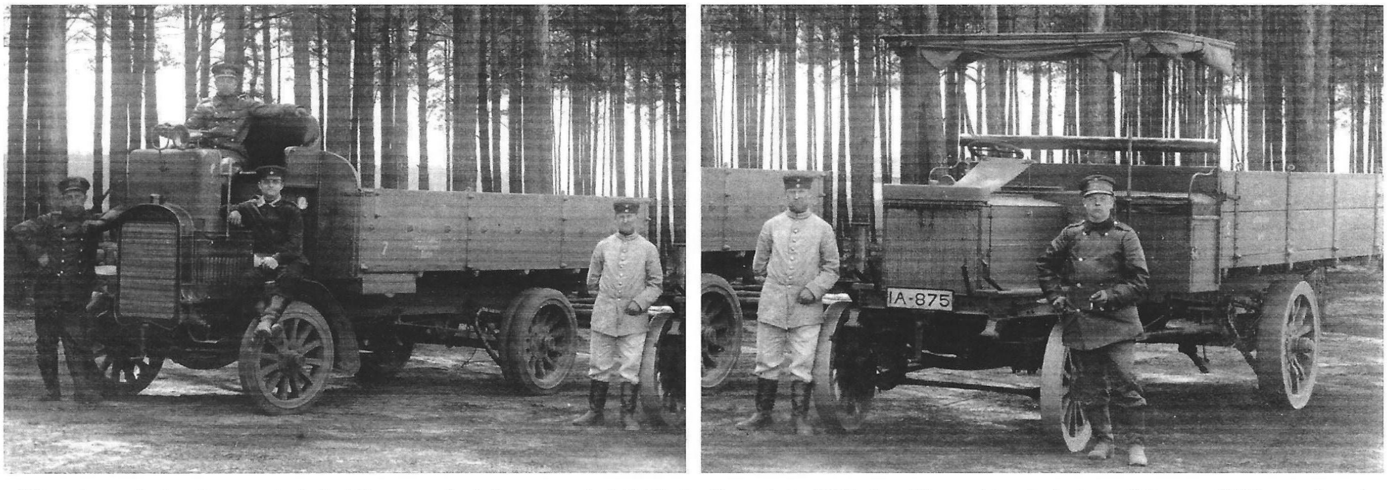




An early example of a solo truck trialled by the military is this 12hp Daimler *Militärlastwagen* of 1904. All-steel tractor wheels were here superseded by wooden spoked wheels of different sizes – the horse-drawn cart was still an influence in these early days.
Credit: Jochen Vollert Collection

For service in the German colonies such as *Deutsch-Südwestafrika* several German manufacturers offered so-called *Kolonialtypen* 'colonial service' types of trucks. These were of more sturdy design as they also needed to go off-road. One example is this Daimler *Kolonialtyp* in service with German *Schutztruppe* defence forces in South-West Africa. Note the full-steel artillery wheels - they were considered vital to get enough grip when not driven on hard roads. This example from about 1907 vintage seems to serve with a cavalry unit transporting horse fodder and other equipment. Credit: Jochen Vollert Collection





These two solo trucks were tested at the army training ground at Zeithain, Saxonia in 1908. As with most truck designs of the pre-1910 era, almost nothing is known about the types and their specifications. To the left is an S.A. Gaggenau *Frontlenker* cab-over-engine truck, and to the right an early Büssing with a typical radiator of this manufacturer. The lettering on the cargo bays' sides reads '*Versuchs-Abteilung der Verkehrstruppen, Berlin*' (experimental detachment of transport, Berlin) Credit: Jochen Vollert Collection

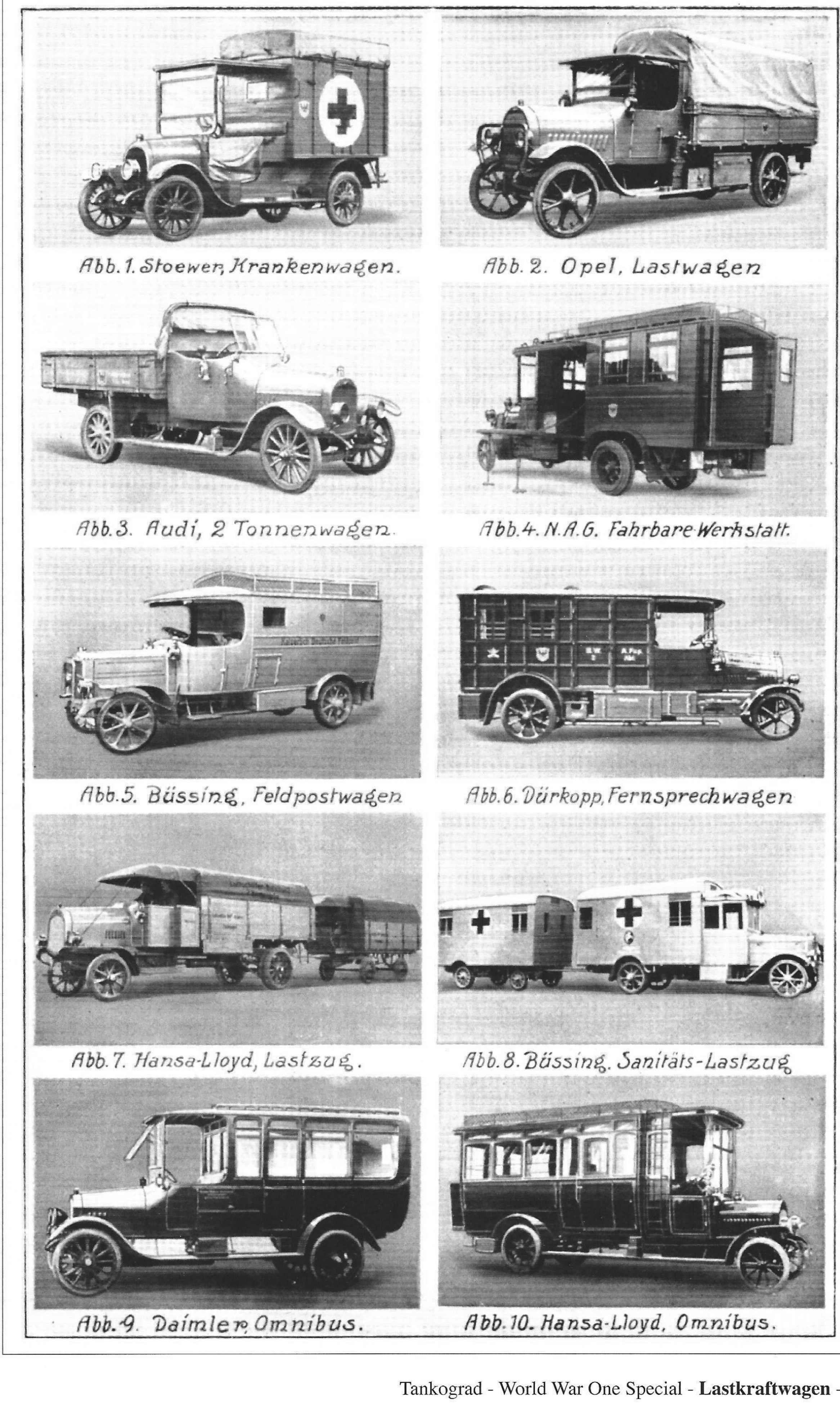


Abb. 1. Stoewer, Krankenwagen.

Abb. 2. Opel, Lastwagen

Abb. 3. Audi, 2 Tonnenwagen.

Abb. 4. N.A.G. Fahrbare Werkstatt.

Abb. 5. Büssing, Feldpostwagen

Abb. 6. Dürkopp, Fernsprechwagen

Abb. 7. Hansa-Lloyd, Lastzug.

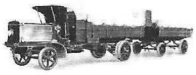
Abb. 8. Büssing. Sanitäts-Lastzug

Abb. 9. Daimler, Omnibus.

Abb. 10. Hansa-Lloyd, Omnibus.

A 1912 visual overview of the basic truck-type classes as used by the Imperial German Army at that time: 1 - Stoewer ambulance; 2 - Opel cargo truck; 3 - Audi 2-ton light truck/van; 4 - NAG mobile workshop; 5 - Büssing field mail service truck; 6 - Dürkopp signals van; 7 - Hansa-Lloyd truck-trailer combination (subsidy truck); 8 - Büssing ambulance road train; 9 - Daimler bus; 10 - Hansa-Lloyd bus.

Credit: Jochen Vollert Collection



02.

Subventionswagen - Armeelastzüge
Subsidy Trucks - Army Truck-Trailer Combinations

As with many other nations the Imperial German Army was willing to adopt the new military tool of trade, the *Lastkrafwagen* (truck), yet the financial resources put aside for this new arm of the fighting force was meagre. On one hand the large number of trucks to equip army columns was required only in wartime, after general mobilisation had filled up the ranks and the army corps would have their full strength. To purchase and entertain a large truck fleet in peacetime was seen as a waste of scarce resources. On the other hand, the *Kriegsleistungsgesetz* gave the army the legal means to confiscate any civilian vehicle in case of a war, yet in the first decade of the 20th century there simply were simply not enough civilian trucks in Germany to be confiscated to fill the needs of the military. In addition most of these civilian types neither had the payload, power nor robustness to be acceptable for military applications such as column duty that is based on homogenous types with similar power/payload/top speed properties. Another problem was, that there were so many different types and designs that keeping such a colourful fleet on the road would be a logistic and maintenance nightmare.

The ideal solution of the dilemma would have been the purchase of an *Einheitswagen* standardised military truck design to equip the entire army. Aside from the aforementioned financial issues with this idea one vital fact against an *Einheitswagen* at that time also needs to be noted: In the years from 1907 the design of trucks picked up such a pace that better and more modern types with significantly improved properties appeared almost every year. This meant in practice, that the ideal *Einheitswagen* would be technically completely outdated even before all army units could have been equipped with it*. In addition to these practical problems many authorities at that time in Germany were not at all convinced that motor vehicles would replace the reliable, cheap and readily available horse as the main means of transport in the near future.

Subventionswagen

To cope with the dilemma of purchasing a standardised truck yet in large numbers for the army the idea of the *Subventionswagen* subsidy truck was born. This approach basically meant that the army would select types of trucks from various manufacturers that met the required army minimum in terms of power, size and payload. These "military types" could then be purchased by civilian companies at a reduced price under the obligation that they had to be kept in military-service configuration and made available to the army when required. This approach should have made sure that the army had enough suitable trucks to draft, while it did not need to bother with purchasing and maintaining these vehicles.

The major decision factor to outline the *Subventionswagen* was the gross weight (weight of truck plus full payload). It needed to be big enough to grant the transport of sufficient supplies yet small enough to keep the trucks manoeuvrable on all types of roads inside Germany and abroad. The ideal mixture was found in the *Armeelastzug* truck-trailer combination.

To make the purchase of the *Subventionswagen* trucks (the price for e.g. the DAAG model is given at 21,500 Mark including rubber-rimmed wheels, while a horse cost 1,400 Mark) financially interesting to civilian companies the purchase was funded by the army with a 4,000 Mark one-time payment, plus an annual premium of 1,000 Mark, payable for four to five years. With signing the contract the civilian company took up the following duties:

- No sale or rental of the truck abroad
- For the duration of five years the truck must be kept in military-service condition
- Spare parts, equipment and tools must be complete at all times
- The army authorities have right to inspect the vehicle at any time
- The truck has to be insured against fire and accidents
- The truck has to be parked in a *Fahrzeugschuppen* (vehicle shed) built to specification with a roof and protected against frost
- The owner has to run a driver's log

The fact hat the truck had to be handed over to the army in case of war immediately was seen not much of a drawback by the owners as the army would have impressed all civilian vehicles for that purpose anyway.

The army outlined the technical specifications of a *Subventionswagen* to the manufacturers as follows:

Armeelastzug 1908-12

A motor vehicle of 4.5 tonnes with a 4 tonne payload and a 9 tonne gross train weight, a maximum rear-axle load of 5.5 tonnes and towing a trailer with an additional 2 tonne payload (from 1909). An *Armeelastzug* comprises a *Lastkraftwagen* (truck) and a *Anhänger* (trailer), both truck and trailer have to meet the 1910 *Reichsgesetzblatt* (law) technical criteria. Additionally the vehicles have to meet the state-of-the-art of vehicle technology of their production year, including full service capabilities for winter time. The truck is to be operated by a two-man crew, the trailer with a one-man crew. The truck-trailer combination has to able to negotiate a 1:7 ascending slope. The top speed must not exceed 16km/h in 4th gear on level ground. Engine output is defined at a minimum of 35hp. While the trucks were to be equipped with rubber-rimmed tyres, the trailers featured iron-clad tyres.

Year	Number of trucks	Number of trailers	Participating companies
1908	166	none	6
1909	176	176	11
1910	140	140	12
1911	141	141	12
1912	120	120	12

These figures add up to a total of 743 *Subventionswagen* (*Armeelastzüge*) for Prussia plus 82 for Bavaria for the timeframe of 1908-12.

Armeelastzug 1913

For the *Armeelastzug 1913* the outlines were adapted by reducing the vehicle weight from 4.5 to 4 tonnes, this reduced the gross train weight from 9 tonnes to 8 tonnes maintaining the 4 tonne payload. To allow the negotiation of smaller roads the track was reduced from 170cm to 155cm. The maximum axle loads were also revised. The 1912 trailer had been issued with a *Bremser* (brake operator), on the 1913 model the braking system of the truck was combined with the

---

* It needs to be noted that at this time there was no mass production of any motor vehicle world wide, all were built to customers' specifications by hand, hence production output was extremely slow.

brakes for the trailer making the third crewmember superfluous. Another technical improvement was the introduction of a starter next to the driver in the cab rather than on the front of the vehicle. The amount of fuel carried on board was increased to 200 litres plus 10 litres of oil to enhance the road range to 500km. The fuel consumption is given with 0.4 litres *Schwerbenzin* (heavy petrol) or 0.44 litres of *Benzol* per 1km. Wherever possible steel wheels were to be used in favour of wooden wheels. To guarantee an improved interchangeability of spare parts between the *Armeelastzüge* of the various makes components such as the vehicle frame, the cargo bay, the clutch and the chain drive were to be standardised.
The first *Armeelastzüge 1913* were offered from 01 April 1913, no sales figures for this type are available.

The Dead End

Interestingly the best *Subventionswagen* customers were breweries. For the army the subsidy truck scheme meant a total capacity of about 5,000 tonnes compared to only 400 tonnes for a railroad freight train. While a cart drawn by two horses could load no more than 2 tonnes with a daily range of 40km, an *Armeelastzug* with a 6-7 tonne load could reach 80km per day. This means the *Armeelastzüge* in total replaced twelve railroad freight trains or 10,000 horses. The total investment was calculated at 16 Million Marks.
These figures look impressive on paper. Yet with the outbreak of the war in 1914 there were by far not enough *Subventionswagen* available, thus a huge gap openend between availability and demand. By August 1915 the army had impressed a total of 10,400 trucks, among them only about 800-900 *Subventionswagen*. Rather than operating a fleet of military grade standardised trucks, the fear of having to rely on a vast number of impressed motor vehicles, most of them by their specifications not suited for military service and causing a spare part and maintenance nightmare had become harsh reality.
Yet this was not the end of the dilemma. During the course of the war after the stalemate in the trenches, it became clear that the *Armeelastzug* truck-trailer combination was less suitable for the bad roads behind the frontlines rather than regular solo truck designs. This consequently rendered the *Armeelastzug* design outdated and production was soon discontinued. The trucks of the truck-trailer combinations were continued to be built and used during the war, yet mostly as solo trucks without any associated trailers. The *Armeelastzüge* nevertheless were the first attempt from the German side to create a standardised "military truck" design and all wartime designs were based on the experiences of these pre-war models.

Subventionswagen - The Manufacturers

The first manufacturers offering a *Subventionswagen* under new subsidy scheme to the then Prussian Army were

- Daimler Motorengesellschaft (Marienfelde near Berlin)
- Büssing (Braunschweig)
- Neue Automobil-Gesellschaft NAG, (Oberschönweide near Berlin) and
- Süddeutsche Automobilfabrik Gaggenau, later renamed Benz Werke (Gaggenau).

These were later followed by

- Motoren- und Lastwagen-Aktien-Gesellschaft m.b.H. Mulag (Aachen)
- Norddeutsche Automobil- und Motoren-Aktien-Gesellschaft NAMAG with their "Lloyd" models (Bremen-Hastedt)
- Fahrzeug Fabrik Eisenach with their "Dixi" models (Eisenach)
- Bielefelder Maschinenfabrik Dürkopp (Bielefeld)
- Nacke (Coswig)
- Podeus (Wismar)
- Erhardt (Zella - St. Blasii)
- Deutsche Last-Automobilgesellschaft, AG DAAG (Ratingen)
- Gebrüder Stoewer (Stettin)
- Argus Motorengesellschaft (Reinickendorf bei Berlin)

Participating in the later *Subventionsfahrten* (subsidy truck road trials) was also

- Adler (Frankfurt/Main)

The state of Bavaria also issued a subsidy scheme, yet focussing only on the following manufacturers

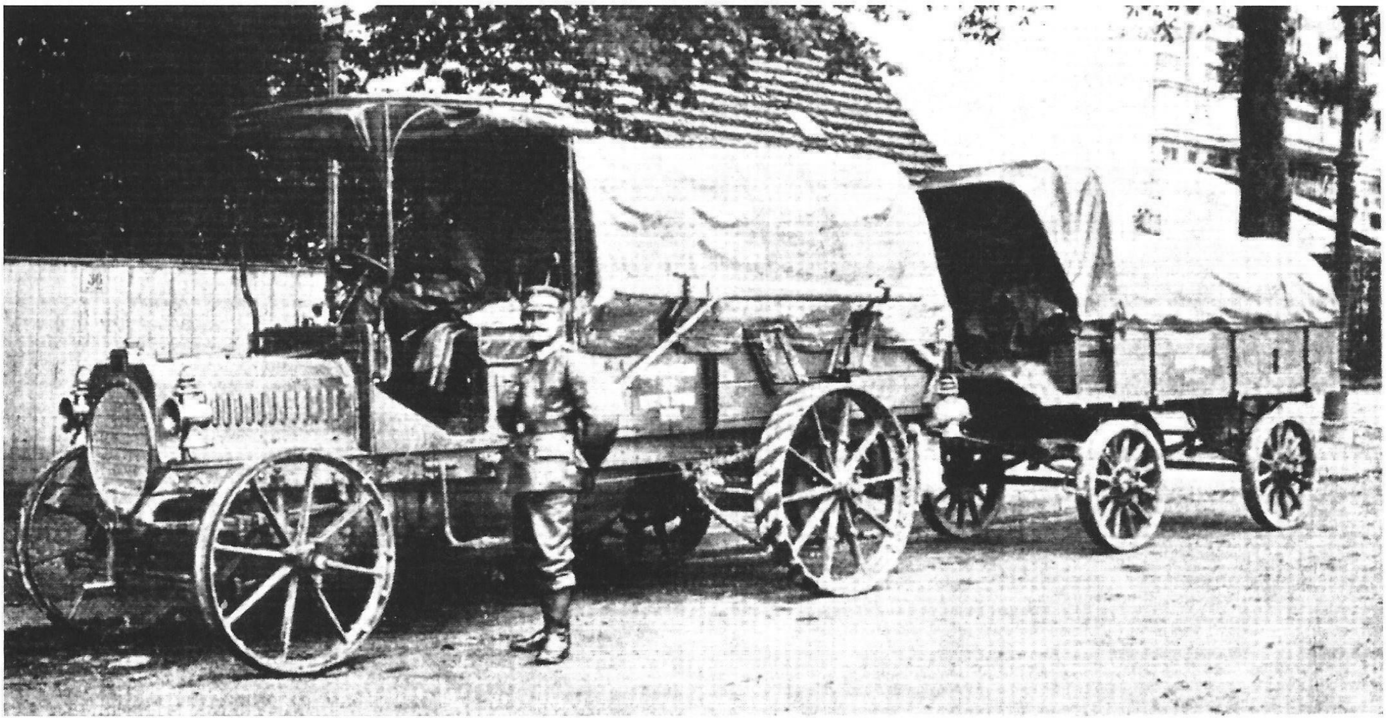
- Fahrzeug-Fabrik Ansbach GmbH (Ansbach)
- Büssing – Josef Rathgeber (München)

and, as Prussia,

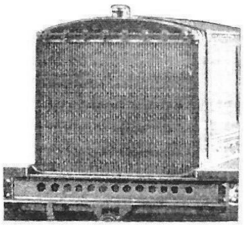
- Benz Werke Gaggenau (Gaggenau)

Armeelastzüge Unit Organisation

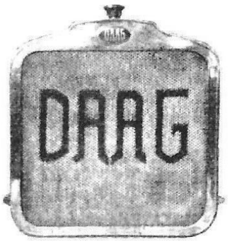
One *Armeelastzug* could transport 50-55 standing soldiers or 40 sitting soldiers with full gear (*feldmarschmäßig*). For standard trucks the transport of troops was forbidden, a regulation that softened somewhat in later war years. For the transport of wounded, special regulations applied. In case cargo was hauled, loading had to be carried out by depot or ammunition dump soldiers, and soldiers of the vehicle column were ordered not to do so.
On *Armeelastzüge* truck-trailer combinations of the column, the *Wagenführer* (vehicle commander/driver) was the superior of the *Begleitmann* (assistant driver) and *Bremser* (trailer brake operator). All three were soldiers' ranks. The *Wagenführer* was responsible for the technical condition and readiness of the truck, and he had to check it on every possible occasion. In case of minor repairs, he had to carry them out personally. If a major repair were necessary, he had to contact his *Unteroffizier*. The *Wagenführer* took care of the vehicle's fuel supply and completeness of the onboard equipment, spare parts and tools, plus he ran the vehicle's operational diary. The *Wagenführer* was supported in his duties by the *Begleitmann*, who guided him with hand signals when he dismounted in a difficult operational scenario. He observed signals of the column and passed these on to the *Wagenführer*. Also, he operated the bugle to sound the signal "road free". The *Bremser* was responsible for the technical condition of the trailer and the tow hitch. His other duties were similar to the *Begleitmann*. He signalled the other crewmembers by using a *Zugleine* (signalling lanyard) that reached from the trailer to the truck cab. Trailers were equipped so they could be horse-drawn over rough terrain when no motor vehicles could be employed.
It needs to be noted that the *Armeelastzug*, a truck with an associated braked trailer and three crewmembers, was integral in operational planning of the immediate pre-war and early-war plans. However, it soon turned out that the number of available trailers and the often harsh road conditions on the Western and Eastern Fronts did not allow the operation of truck-trailer combinations. Therefore, after the arrival of more confiscated and impressed solo trucks, the marching columns consisted of solo trucks only and the classic *Armeelastzug* vanished. As a consequence, the third crewmember, the trailer brake operator, became obsolete.



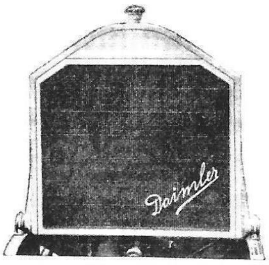
One of the earliest depictions of an *Armeelastzug* army truck-trailer combination is this NAG of 1905. Note once more the all-steel wheels that would cause severe shocks to the suspension on bad roads, thus significantly limiting the service life of these components. Consider also the virtually non-existent comfort for the driver, adding much to his fatigue on longer trips. The all-steel-wheel approach would soon be replaced by rubber-rimmed wooden wheels that offered a better ride and longer service life. Credit: Jochen Vollert Collection



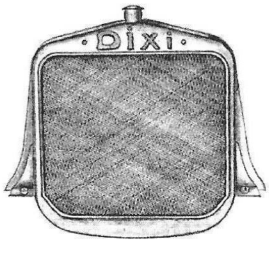
Büssing



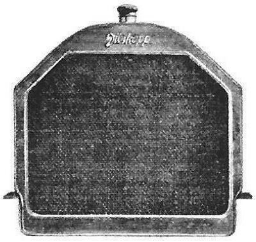
Daag



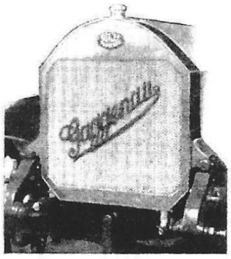
Daimler



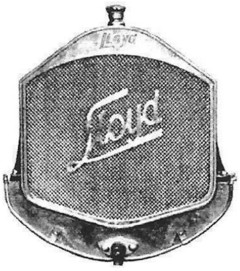
Dixi



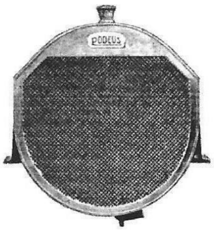
Dürkopp



Gaggenau

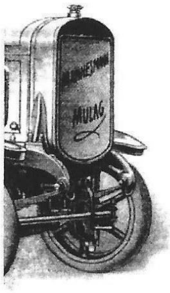


Lloyd

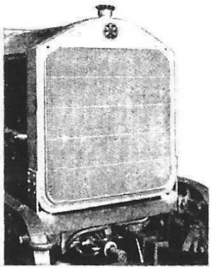


Podeus

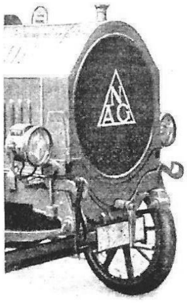
1912 visual overview of various manufacturers' radiator shapes of *Subventionswagen* (subsidy trucks). 'Gaggenau' was part of the Benz-Werke. 'Mulag' later became Mannesmann-Mulag
Credit: Jochen Vollert Collection



Mulag



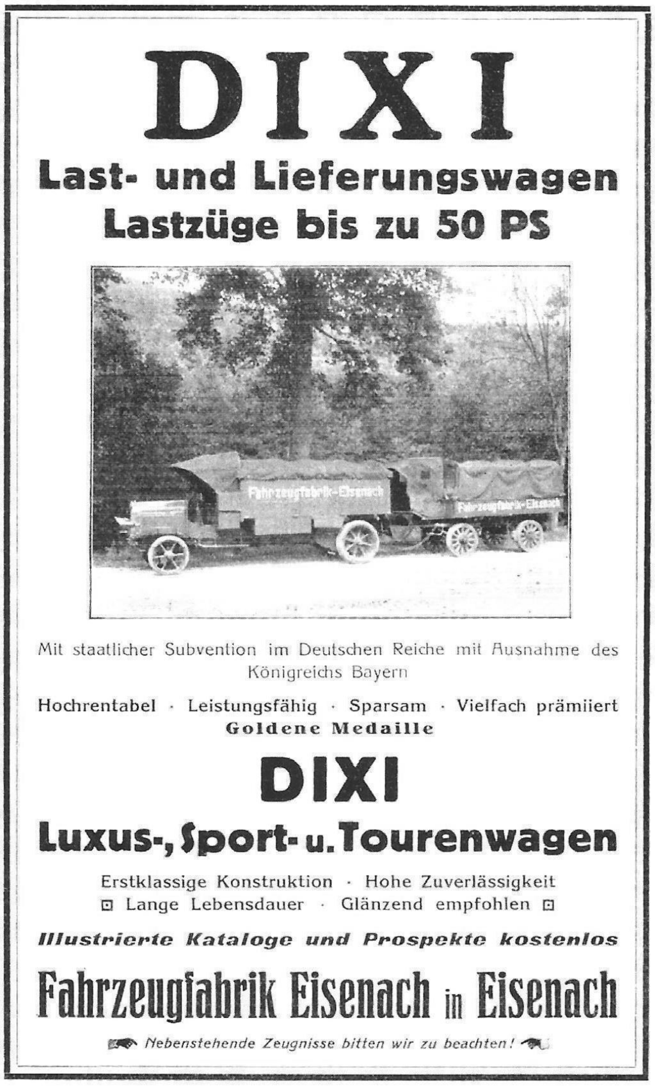
Nacke



N. A. G.

02.1 Armeelastzüge im Spiegel der Werbung
Army Truck-Trailer Combinations in Advertisments

The following pages show 1911-16 advertisements from various manufacturers of *Subventionswagen/Armeelastzüge* who were offering their products to civilian companies. As is typical for that period, the trucks are shown in graphics or heavily retouched photos only. In addition, no proper vehicle designations were issued. This leaves the radiator shape and engine compartment details as often the only identification features. All illustrations: Jochen Vollert Collection



DIXI

Last- und Lieferungswagen
Lastzüge bis zu 50 PS

Fahrzeugfabrik-Eisenach
Fahrzeugfabrik-Eisenach

Mit staatlicher Subvention im Deutschen Reiche mit Ausnahme des Königreichs Bayern

Hochrentabel · Leistungsfähig · Sparsam · Vielfach prämiiert
Goldene Medaille

DIXI

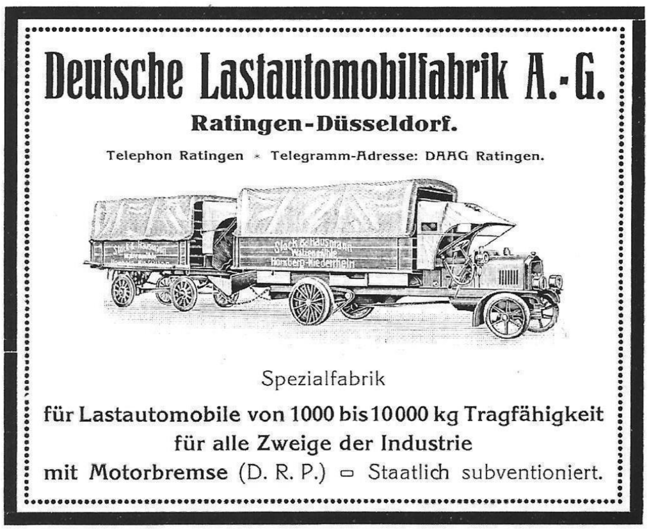
Luxus-, Sport- u. Tourenwagen

Erstklassige Konstruktion · Hohe Zuverlässigkeit
▫ Lange Lebensdauer · Glänzend empfohlen ▫

Illustrierte Kataloge und Prospekte kostenlos

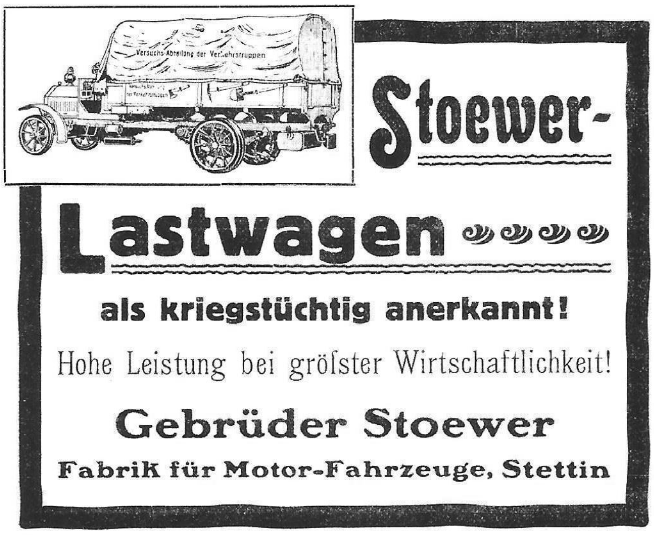
Fahrzeugfabrik Eisenach in Eisenach

☛ *Nebenstehende Zeugnisse bitten wir zu beachten!* ☚



Deutsche Lastautomobilfabrik A.-G.
Ratingen-Düsseldorf.
Telephon Ratingen ∗ Telegramm-Adresse: DAAG Ratingen.

Spezialfabrik
für Lastautomobile von 1000 bis 10000 kg Tragfähigkeit
für alle Zweige der Industrie
mit Motorbremse (D. R. P.) ▭ Staatlich subventioniert.



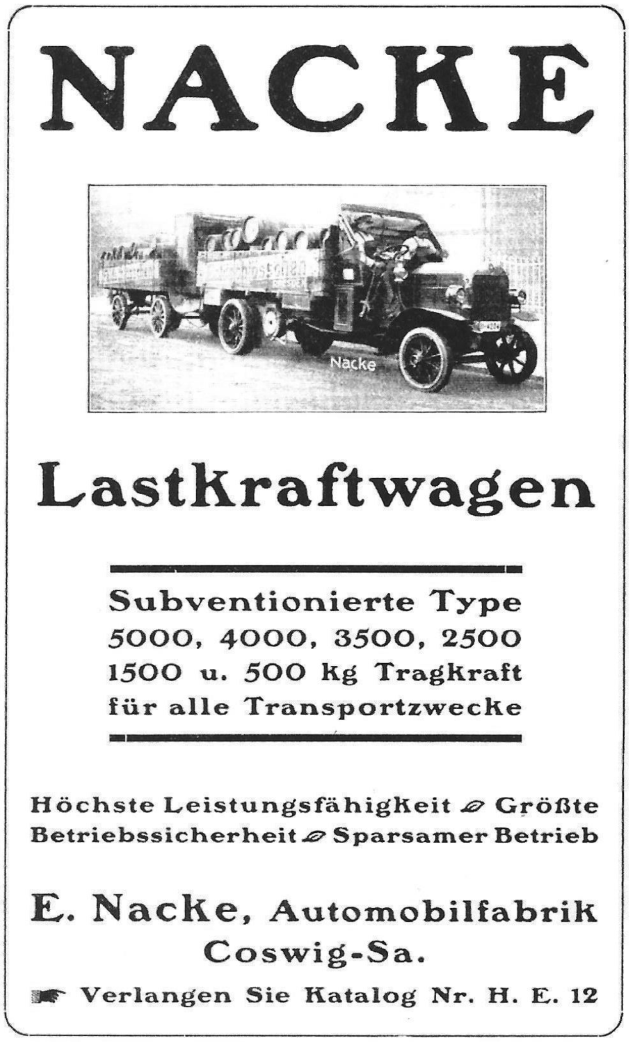
Versuchs-Abteilung der Verkehrstruppen

Stoewer-
Lastwagen

als kriegstüchtig anerkannt!

Hohe Leistung bei größter Wirtschaftlichkeit!

Gebrüder Stoewer
Fabrik für Motor-Fahrzeuge, Stettin



NACKE

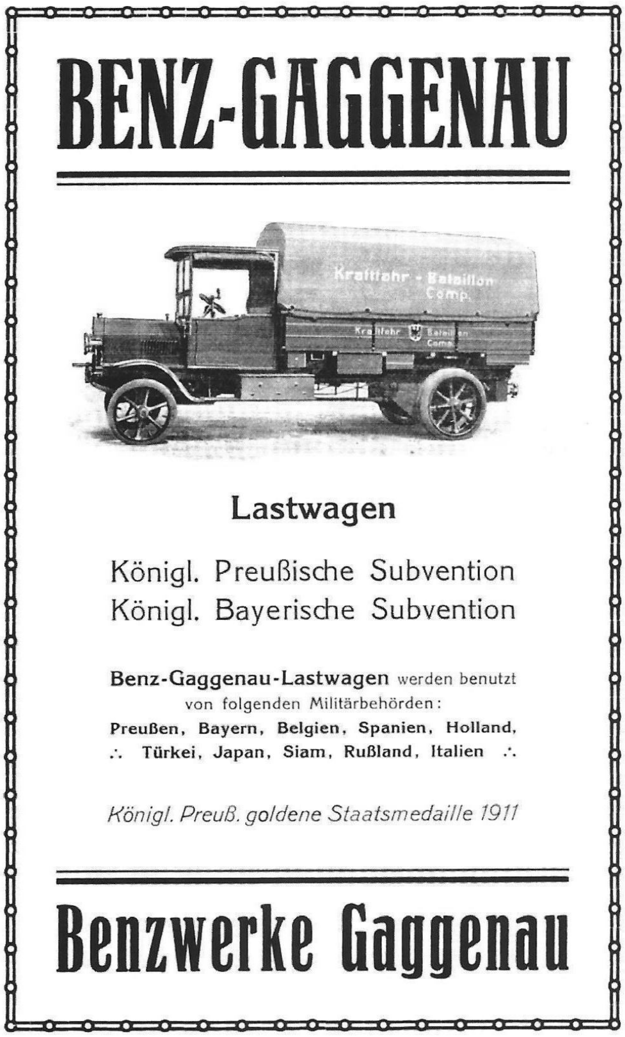
Lastkraftwagen

Subventionierte Type
5000, 4000, 3500, 2500
1500 u. 500 kg Tragkraft
für alle Transportzwecke

Höchste Leistungsfähigkeit ⊘ Größte Betriebssicherheit ⊘ Sparsamer Betrieb

E. Nacke, Automobilfabrik
Coswig-Sa.

☛ **Verlangen Sie Katalog Nr. H. E. 12**


Kraftfahr - Bataillon Comp.
Kraftfahr Bataillon Comp.

BENZ-GAGGENAU

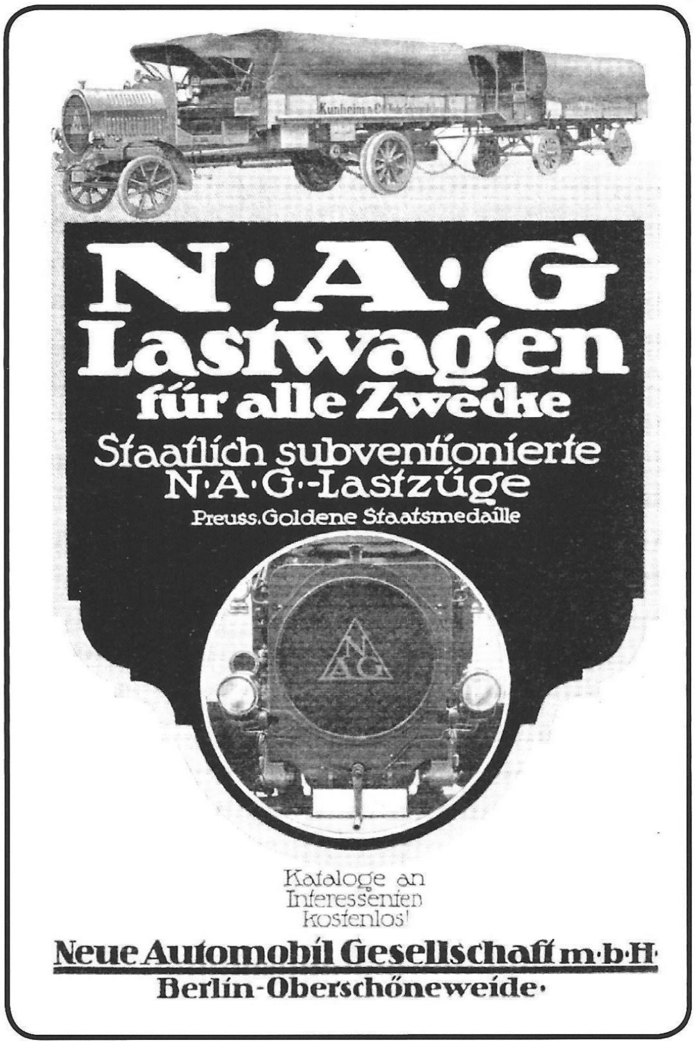
Lastwagen

Königl. Preußische Subvention
Königl. Bayerische Subvention

Benz-Gaggenau-Lastwagen werden benutzt von folgenden Militärbehörden:
Preußen, Bayern, Belgien, Spanien, Holland, ∴ Türkei, Japan, Siam, Rußland, Italien ∴

Königl. Preuß. goldene Staatsmedaille 1911

Benzwerke Gaggenau



N·A·G

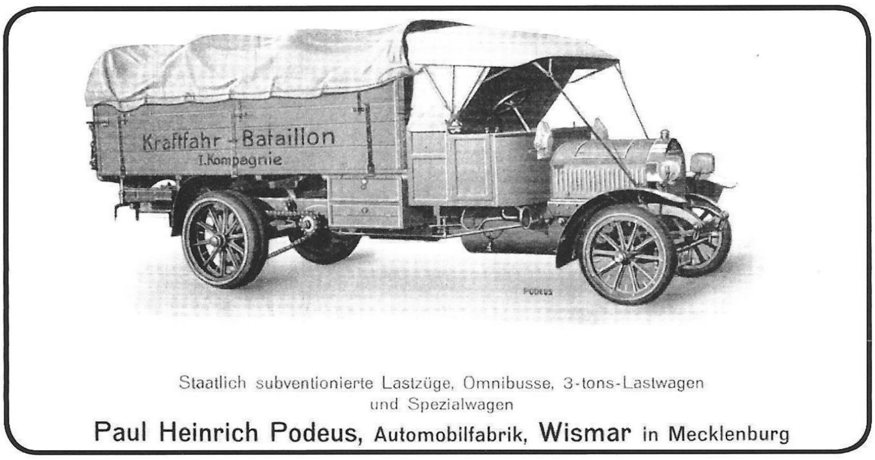
Lastwagen für alle Zwecke

Staatlich subventionierte
N·A·G·-Lastzüge
Preuss. Goldene Staatsmedaille

Kataloge an
Interessenten
kostenlos!

Neue Automobil Gesellschaft m·b·H·
Berlin-Oberschöneweide·

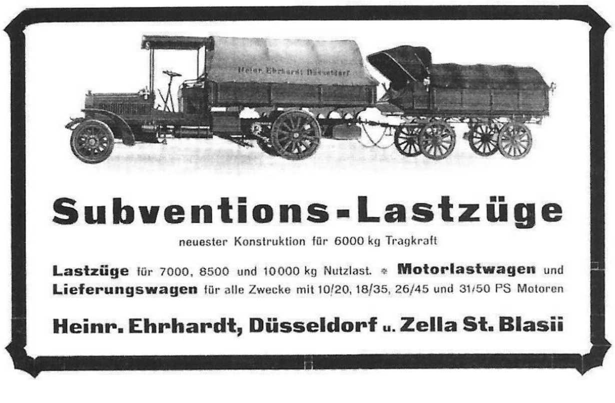
Benz-Werke Gaggenau was the only manufacturer of *Subventionswagen* accepted by both the Prussian and Bavarian Armies, as is prominently displayed in this advertisement.


Kraftfahr - Bataillon
1. Kompagnie
PODEUS

Staatlich subventionierte Lastzüge, Omnibusse, 3-tons-Lastwagen und Spezialwagen

Paul Heinrich Podeus, Automobilfabrik, Wismar in Mecklenburg

Some of the pictured trucks carried the manufacturer's designation on the sides of the cargo bay, while others showed unofficial army markings such as '*Kraftfahr-Bataillon, 1. Kompagnie*' on this Podeus to raise interest among more patriotic buyers.

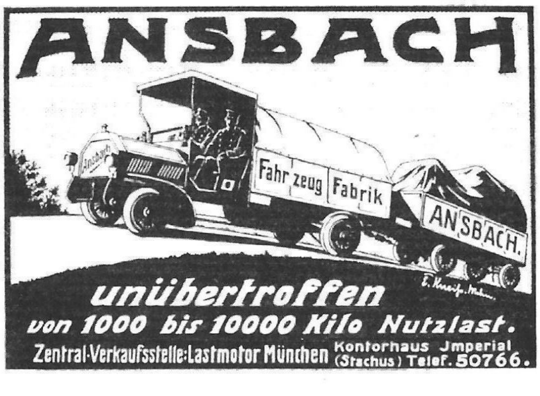

Heinr. Ehrhardt Düsseldorf

Subventions-Lastzüge

neuester Konstruktion für 6000 kg Tragkraft

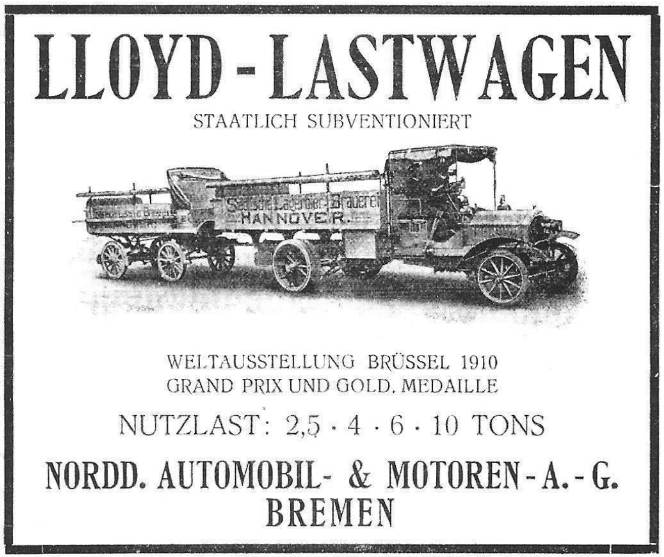
Lastzüge für 7000, 8500 und 10000 kg Nutzlast. ⁕ **Motorlastwagen** und **Lieferungswagen** für alle Zwecke mit 10/20, 18/35, 26/45 und 31/50 PS Motoren

Heinr. Ehrhardt, Düsseldorf u. Zella St. Blasii



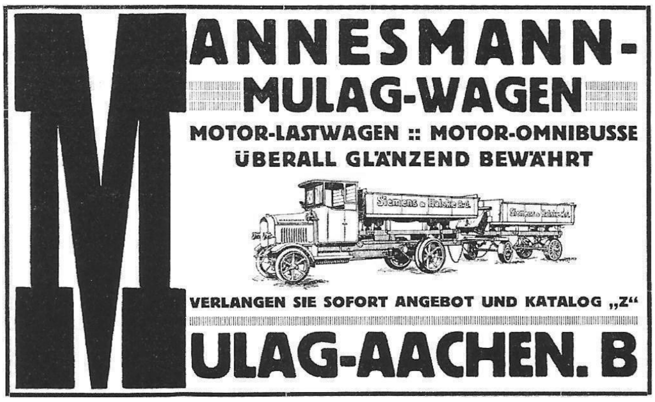
ANSBACH

unübertroffen
von 1000 bis 10000 Kilo Nutzlast.
Zentral-Verkaufsstelle: Lastmotor München Kontorhaus Jmperial (Stachus) Telef. 50766.



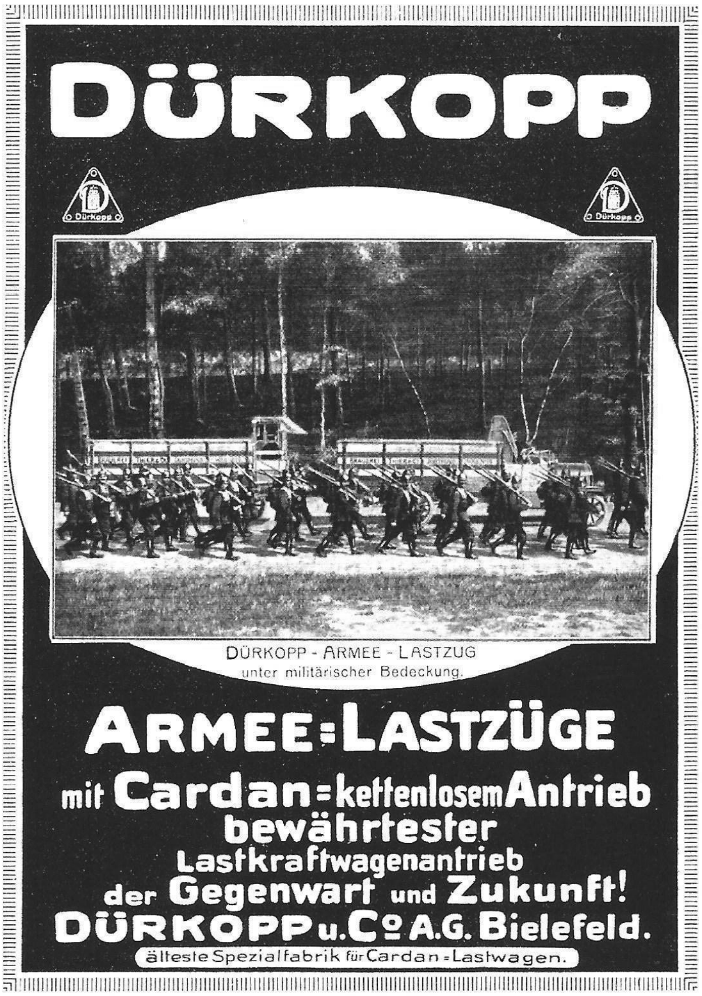
LLOYD-LASTWAGEN
STAATLICH SUBVENTIONIERT

WELTAUSSTELLUNG BRÜSSEL 1910
GRAND PRIX UND GOLD. MEDAILLE
NUTZLAST: 2,5 · 4 · 6 · 10 TONS
NORDD. AUTOMOBIL- & MOTOREN-A.-G.
BREMEN



MANNESMANN-
MULAG-WAGEN
MOTOR-LASTWAGEN :: MOTOR-OMNIBUSSE
ÜBERALL GLÄNZEND BEWÄHRT

VERLANGEN SIE SOFORT ANGEBOT UND KATALOG „Z"
MULAG-AACHEN. B

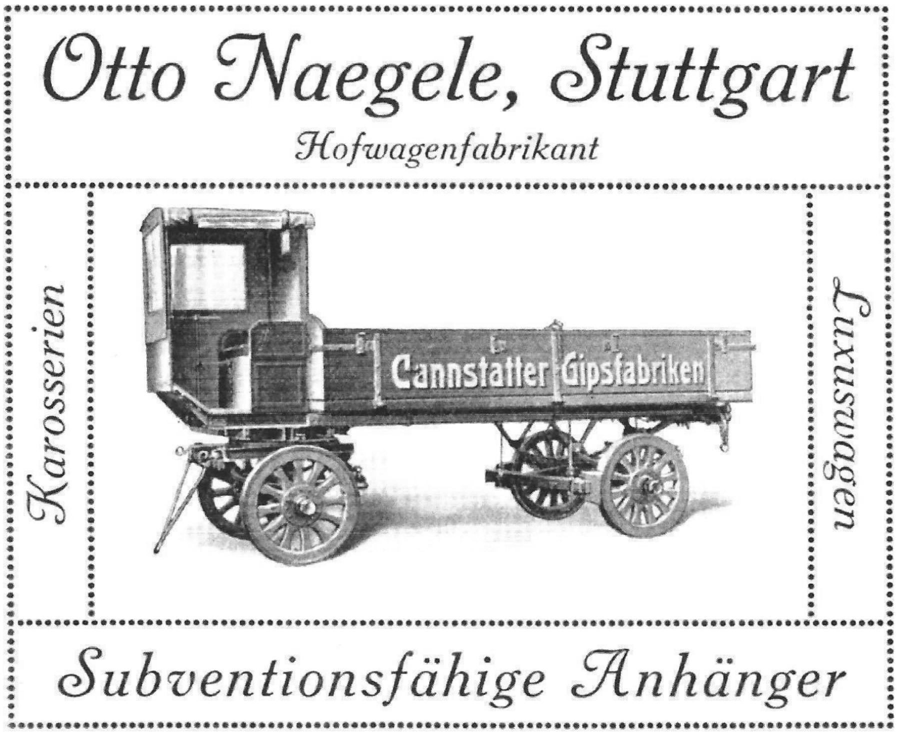


DÜRKOPP

DÜRKOPP - ARMEE - LASTZUG
unter militärischer Bedeckung.

ARMEE=LASTZÜGE
mit Cardan=kettenlosem Antrieb
bewährtester
Lastkraftwagenantrieb
der Gegenwart und Zukunft!
DÜRKOPP u. Co A.G. Bielefeld.
älteste Spezialfabrik für Cardan=Lastwagen.

Dürkopp advertising its *Armeelastzüge* (truck-trailer combinations) with Cardan-drive rather than *kettenloser* (chainless) drive.



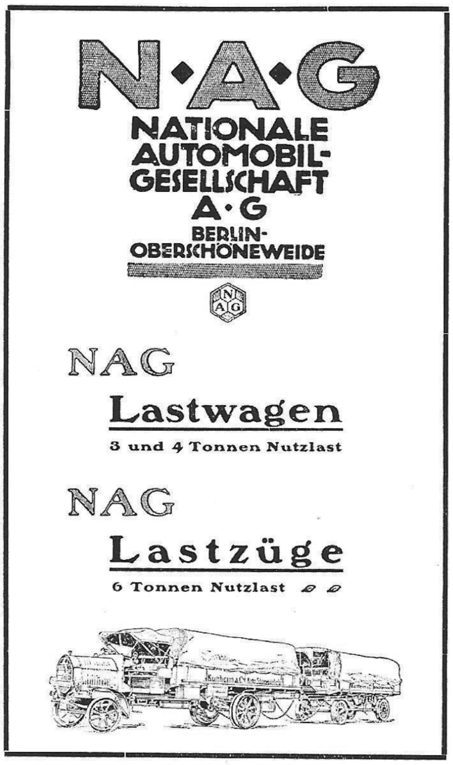
Otto Naegele, Stuttgart
Hofwagenfabrikant

Karosserien
Luxuswagen

Subventionsfähige Anhänger

Cannstatter Gipsfabriken

Aside from manufacturers that offered complete *Armeelastzüge* with truck and trailer, the subsidy trailer could also be purchased independently to be used in connection with similar trucks. This *Subventionsfähiger Anhänger* (subsidy trailer) was offered by Otto Nägele, Hofwagenfabrikant coachbuilders from Stuttgart.
Credit: Jochen Vollert Collection

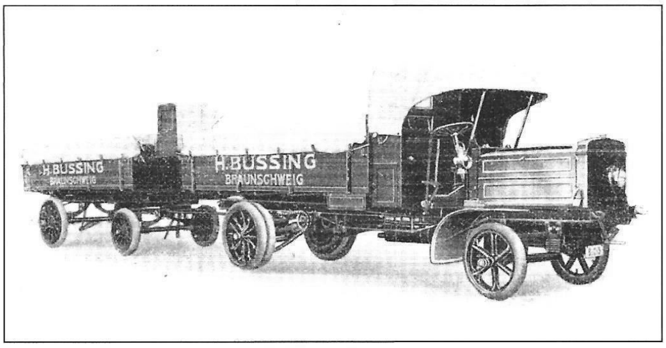


N·A·G
NATIONALE
AUTOMOBIL-
GESELLSCHAFT
A·G
BERLIN-
OBERSCHÖNEWEIDE

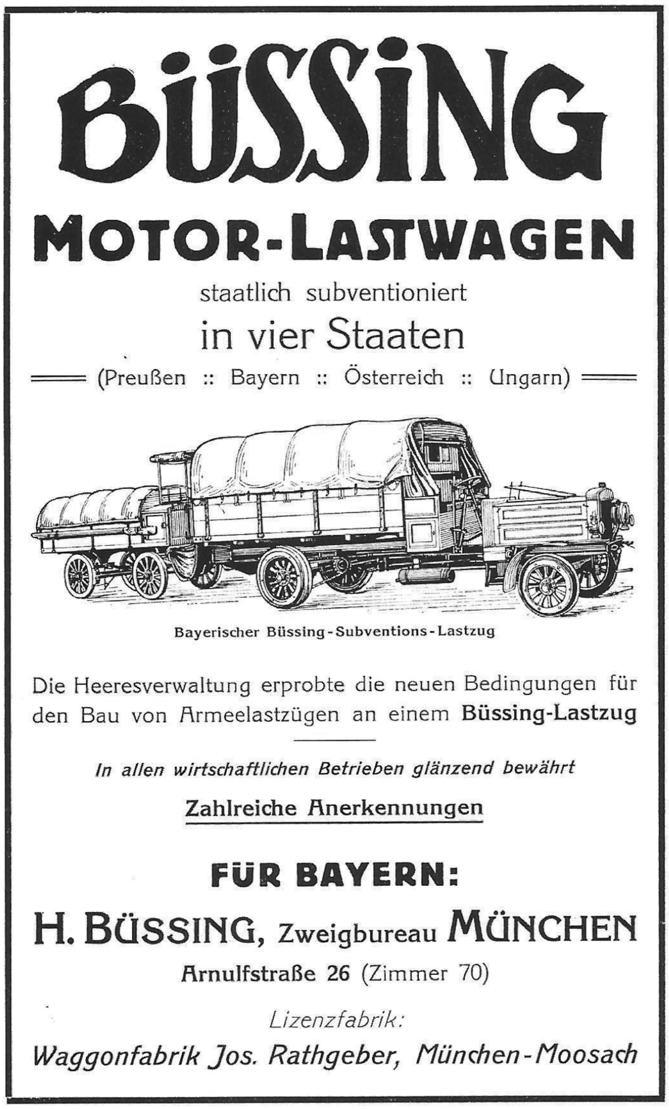
NAG
Lastwagen
3 und 4 Tonnen Nutzlast

NAG
Lastzüge
6 Tonnen Nutzlast

The Büssing company takes up a special role in *Armeelastzug* history. Not only was Büssing busy advertising its products under the subsidy scheme, but it was also one of only few companies of which at least parts of the pre-war archives have survived. The next three pages thus allow a more detailed visual display of Büssing's venture into army truck-trailer combinations, even if technical differences between the annual models are no longer on file.



Original tone of the advertisement: "The ground-breaking Büssing *Subventions-Lastzug* (subsidy truck) of the *Subventionsfahrt* (subsidy truck trial run) *1910*".



BÜSSING

MOTOR-LASTWAGEN

staatlich subventioniert

in vier Staaten

(Preußen :: Bayern :: Österreich :: Ungarn)

Bayerischer Büssing-Subventions-Lastzug

Die Heeresverwaltung erprobte die neuen Bedingungen für den Bau von Armeelastzügen an einem **Büssing-Lastzug**

In allen wirtschaftlichen Betrieben glänzend bewährt

Zahlreiche Anerkennungen

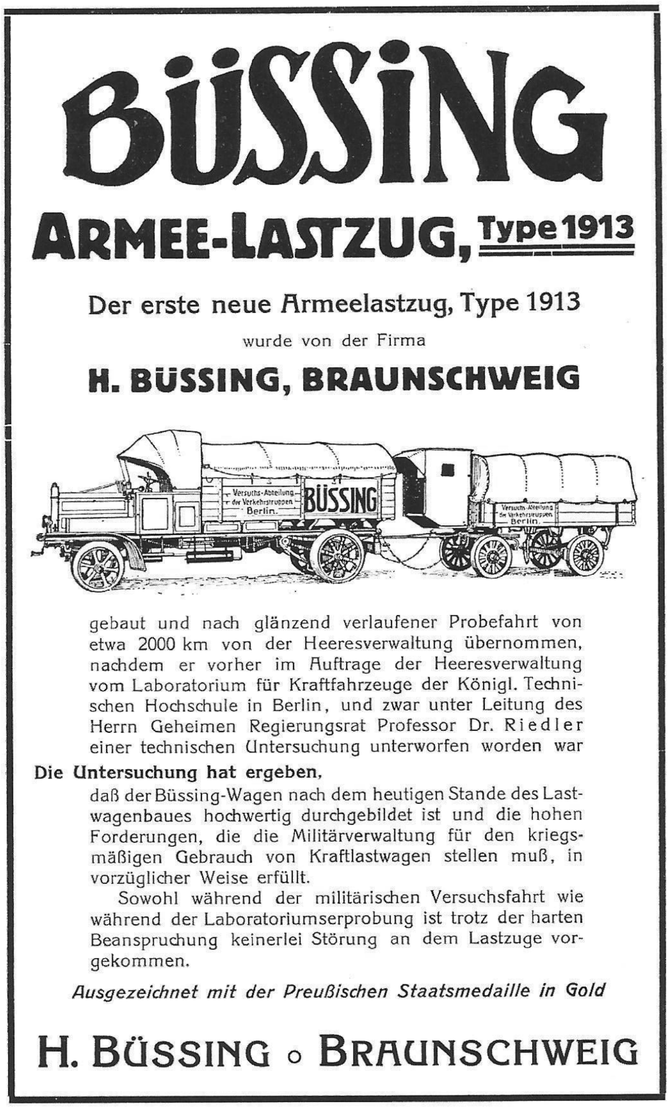
FÜR BAYERN:

H. BÜSSING, Zweigbureau **MÜNCHEN**

Arnulfstraße 26 (Zimmer 70)

Lizenzfabrik:

Waggonfabrik Jos. Rathgeber, München-Moosach


Versuchs-Abteilung der Verkehrstruppen Berlin
BÜSSING
Versuchs-Abteilung der Verkehrstruppen Berlin

BÜSSING

ARMEE-LASTZUG, Type 1913

Der erste neue Armeelastzug, Type 1913

wurde von der Firma

H. BÜSSING, BRAUNSCHWEIG

gebaut und nach glänzend verlaufener Probefahrt von etwa 2000 km von der Heeresverwaltung übernommen, nachdem er vorher im Auftrage der Heeresverwaltung vom Laboratorium für Kraftfahrzeuge der Königl. Technischen Hochschule in Berlin, und zwar unter Leitung des Herrn Geheimen Regierungsrat Professor Dr. Riedler einer technischen Untersuchung unterworfen worden war

Die Untersuchung hat ergeben,

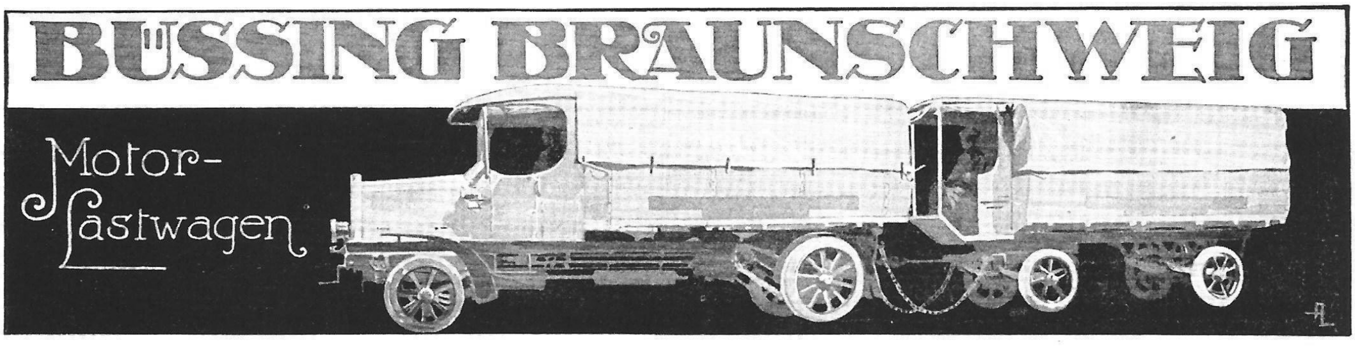
daß der Büssing-Wagen nach dem heutigen Stande des Lastwagenbaues hochwertig durchgebildet ist und die hohen Forderungen, die die Militärverwaltung für den kriegsmäßigen Gebrauch von Kraftlastwagen stellen muß, in vorzüglicher Weise erfüllt.

Sowohl während der militärischen Versuchsfahrt wie während der Laboratoriumserprobung ist trotz der harten Beanspruchung keinerlei Störung an dem Lastzuge vorgekommen.

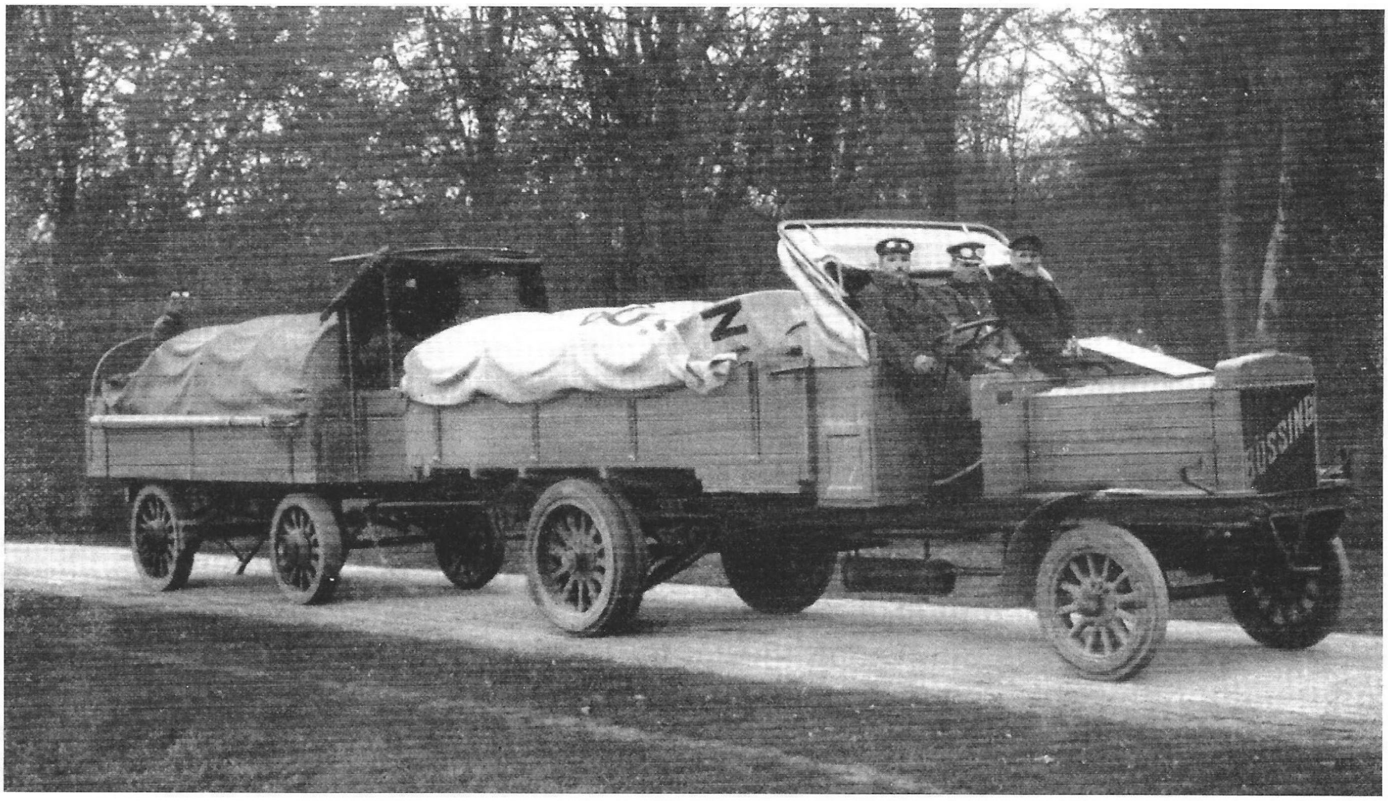
Ausgezeichnet mit der Preußischen Staatsmedaille in Gold

H. BÜSSING ○ BRAUNSCHWEIG

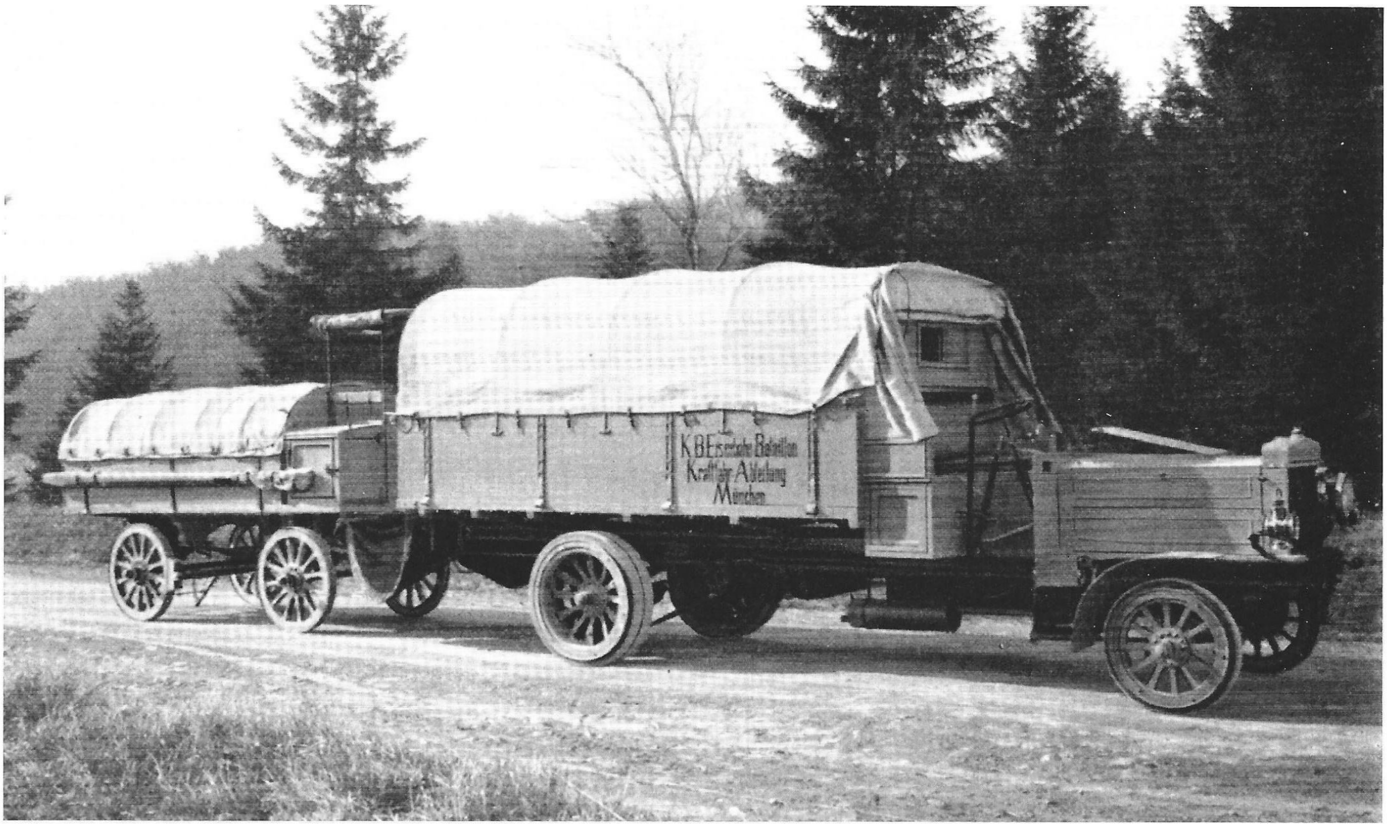
Büssing advertisement of 1912 showing the *Armeelastzug 1912* (left) and the forthcoming *Armeelastzug 1913* (right).



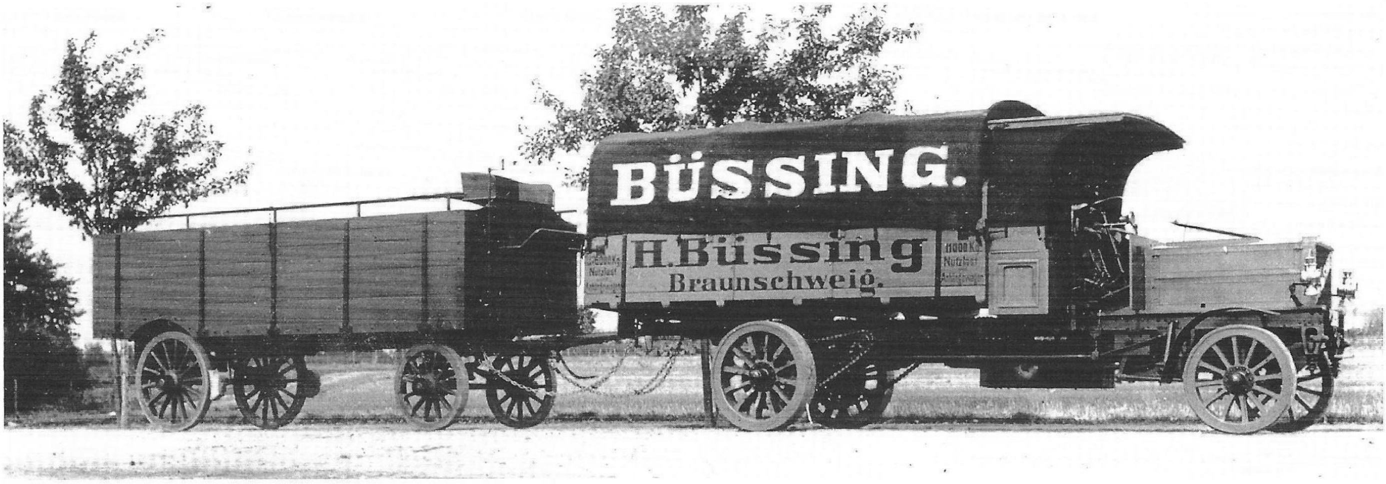
This must be one of the last *Armeelastzug* advertisements showing a Büssing army model of 1916.



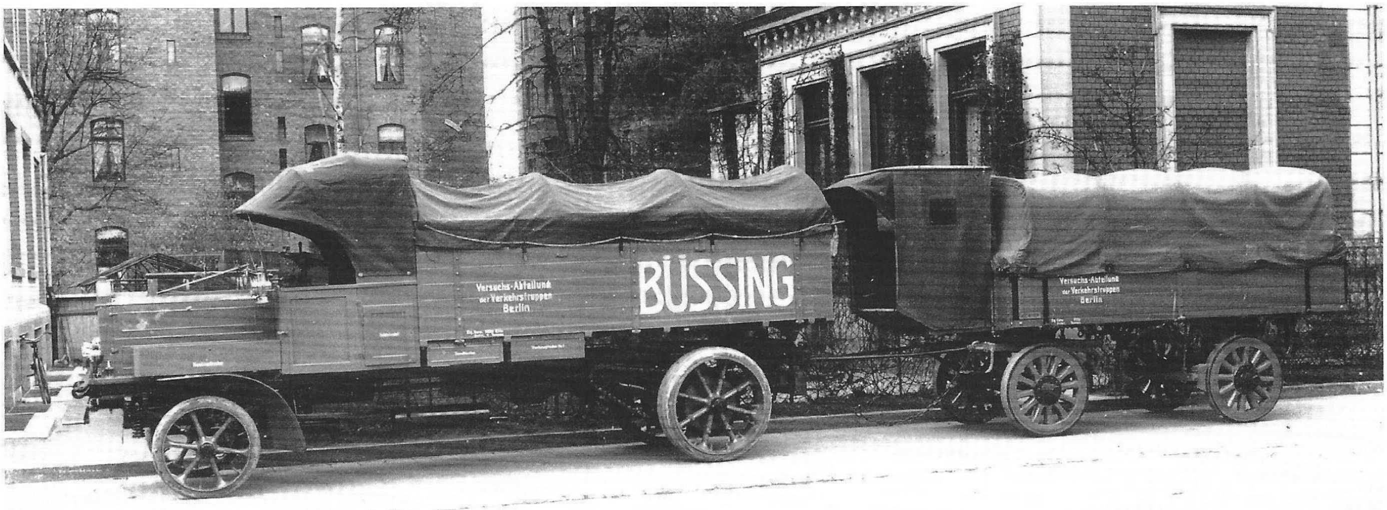
The very first Büssing-made *Armeelastzug* truck-trailer combination trial vehicle as delivered to the Royal Prussian Army in 1908. Note the 'BÜSSING' lettering on the radiator. The truck has right-hand steering, as was usual in that era, even for German vehicles, and the trailer features the required brake operator's cab. By definition, the *Armeelastzug* of 1908-12 was a motor vehicle of 4.5 tonnes with a 4-ton payload and 9-ton gross train weight, a maximum rear-axle load of 5.5 tons and towing a trailer with an additional 2-ton payload (from 1909).
Credit: Werksfoto - Jochen Vollert Collection



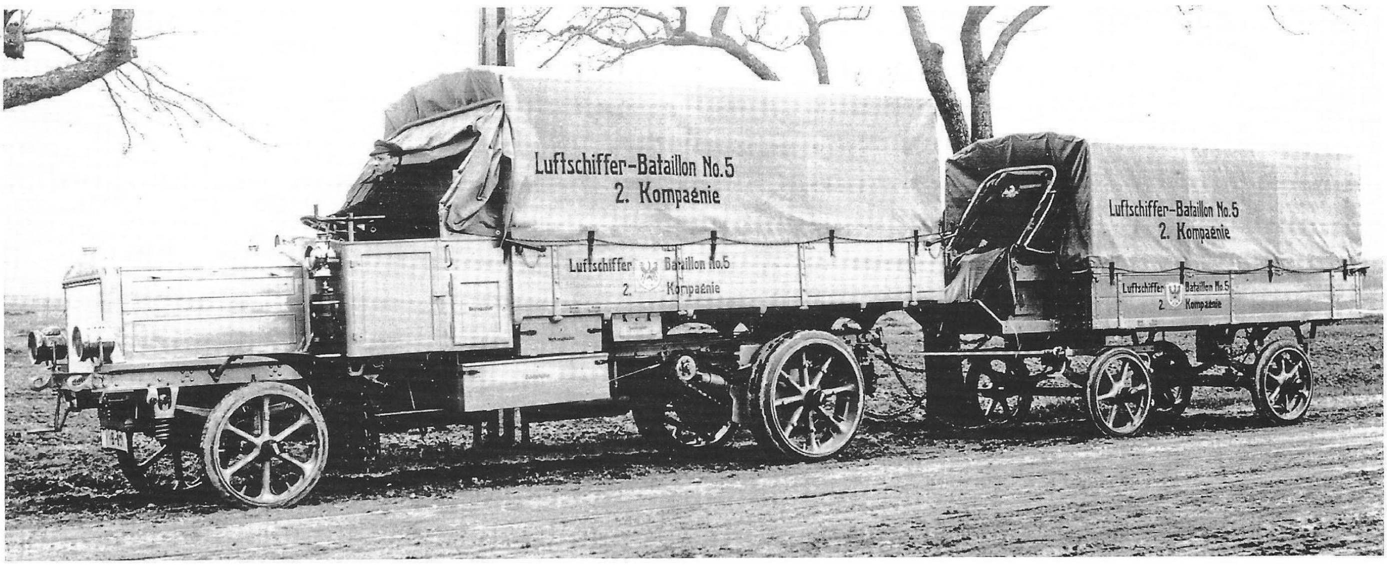
The very first Büssing-made *Armeelastzug* trial vehicle as delivered to the Royal Bavarian Army in 1908. Note the different design of the braker's cab on the trailer, as well as the trailer's different tyres when compared to the Prussian version above. The lettering on the side of the cargo bay reads *Königlich Bayerisches Eisenbahn-Bataillon, Kraftfahr-Abteilung, München* (Royal Bavarian railroad battalion, department of motor vehicles, Munich). The unit was of *Kraftfahrkompanie* size. Credit: Werksfoto - Jochen Vollert Collection


BÜSSING.
H.Büssing
Braunschweig.

A commercial Büssing *Lastzug* truck with trailer of 1910. The truck can carry an 11-ton payload, and the trailer a 6-ton payload. Büssing used its commercial vehicle range to adapt it to military requirements rather than developing a true tactical truck. Credit: Werksfoto - Jochen Vollert Collection


BÜSSING
Versuchs-Abteilung der Verkehrstruppen Berlin
Versuchs-Abteilung der Verkehrstruppen Berlin

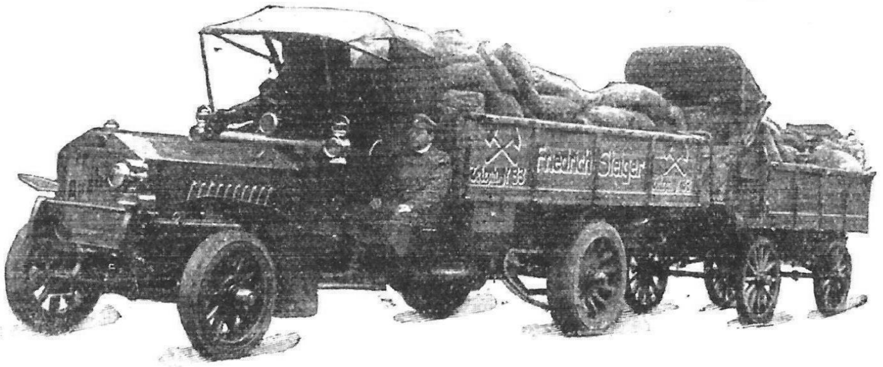
Another Büssing contender for an *Armeelastzug*, this time from 1913. Note the lettering *'Versuchs-Abteilung der Verkehrstruppen, Berlin'* (experimental detachment of transport, Berlin). From 1912, as part of a general standardisation effort with the company's range of vehicles, Büssing had started offering the commercial *Typ II* 2.5-ton truck with a 25hp 4082cc engine, the *Typ III* 3.5-ton truck with 32hp 5813cc engine, the *Typ IV* 4-ton truck with 35hp 5813cc engine, and the *Typ V* 5-ton truck with a 40hp 6898cc engine. The focus on subsidy truck specifications (as outlined by the military based on Büssing's 1911 trial model) allowed further reduction to a much more streamlined range in 1913.
Credit: Werksfoto - Jochen Vollert Collection


Luftschiffer-Bataillon No.5
2. Kompaenie
Luftschiffer Bataillon No.5
2. Kompaenie
Luftschiffer-Bataillon No.5
2. Kompaenie
Luftschiffer Bataillon No.5
2. Kompaenie

The last Büssing contender for the *Armeelastzug* of 1914 in army service, this truck-trailer combination belongs to *2. Kompagnie* (2nd Company) of *Luftschiffer-Bataillon 5* (5th Airship Battalion) of the Prussian Army. From that year, Büssing continued to build its *Typ III/IV/V* models as solo trucks for the military. Note the trailer brake operator sitting in his cab. Credit: Werksfoto - Jochen Vollert Collection

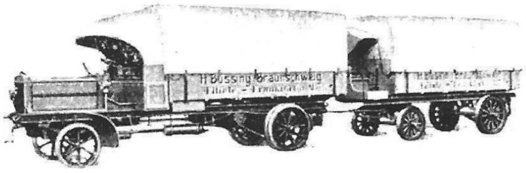
All *Armeelastzug* technical data on this double page is from the 1911 publication *"Motorwagen des Jahres 1911"*.
Credit: Jochen Vollert Collection

Fahrzeugfabrik Ansbach, G. H. b. H., Ansbach i. Bayern



Bezeichnung der Wagentype: Leichter Armeelastzug, subventioniert, Type A. L. Z.
Gewicht des Wagens ohne Wagenkasten: 3150 kg
Höchstgeschwindigkeit: 16 km in der Stunde
Rahmen: Gepresster Stahlrahmen., vorn verjüngt
Achsstand: 4460 mm
Spurweite: 1640 mm
Motor: 4 Zylinder
Zylinderdurchmesser: 140 mm
Kolbenhub: 170 mm
Einlassventile: Gesteuert
Zündung: Abreiss-Kerze, Doppelzündung, zweikerzig
Zündstrom: aus Batterie und Magneto
Vergaser: Für Benzin, Benzol und Schwerbenzin, Spritzdüsen-System, selbsttätig regelnd
Kühlung: Pumpe
Kühler: Lamellen mit Ventilator
Kuppelung: Lederkonus
Getriebe: Schubvorgelege, Kulissenschaltung
Geschwindigkeiten: 4 vorwärts, 1 rückwärts
Uebertragung: Kette
Radachslager: Gleitlager
Oelung: Zwangsläufig mit Pumpe
Bremsen: Zahl: 4, Art: 2 Hinterrad-Innenbremsen und 2 Bremsen auf Differential
Benzinbehälter mit Gefälle
Bergstütze
Art des Wagens: Lastzug
Nutzlast: 5000 kg, ferner 2000 kg auf Anhänger
Ladefläche: 3 m Länge, 2 m Breite
Bereifung: Vollgummi oder Eisen
Wagenkasten: Offen, mit Plantuch
Steigungen: Kann Steigungen bis zu 22% befahren

H. Büssing, Braunschweig

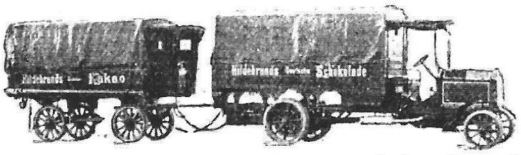


Bezeichnung der Wagentype: Motorlastwagen, Type V
Tragfähigkeit des Chassis: 6200 kg, als Lastzug mit Anhänger: Tragfähigkeit 12000 kg
Gewicht des Wagens mit Wagenkasten je nach Oberbau
Gewicht des Wagens ohne Wagenkasten: 3300 kg
Rahmen: Gerader U.-Walz-Profilrahmen
Achsstand: 4340 mm
Spurweite: 1520 mm
Motor: 4 Zylinder
Leistung: 32 PS oder 40 PS
Einlassventile: Gesteuert
Zündung: Kerze, einkerzig
Zündstrom: Magneto
Vergaser: System Büssing, selbsttätig regelnd
Kühlung: Pumpe
Kühler: Patent Büssing, Lamellen und Strahlbleche mit Ventilator
Kuppelung: Lederkonus
Getriebe: Schubvorgelege
Geschwindigkeiten: 4 vorwärts, 1 rückwärts
Direkter Eingriff bei Höchstgeschwindigkeit
Uebertragung: Kette
Benzinverbrauch für 1 km Fahrt bei mittlerer Belastung 0,4 kg
Radachslager: Gleit-
Oelung: Zwangsläufig, durch Motor angetrieb. Pumpen
Bremsen: Zahl: 2, Art: Fuss- und Handbremsen
Benzinbehälter mit Gefälle
Bergstütze
Reifenabmessungen: Vorderräder 830 × 140 mm, Hinterräder 1030 × 140 mm doppelt
Nutzlast: Bei normalem Oberbau ca. 5000 kg, Nutzlast des Lastzuges ca. 10000 kg
Ladefläche: 4000 mm Länge, 1930 mm Breite
Bereifung: Vollgummi, Doppelreifen an Hinterrädern, auf Wunsch mit Eisenreifen lieferbar
Wagenkasten: 22 verschiedene Oberbauten
Steigungen: Kann Steigungen bis zu 17% befahren

Wagentyp	**vehicle type**	*Getriebe*	**gearbox**
Höchste zulässige Belastung	**maximum payload**	*Getriebe-Geschwindikeit*	**forward/reverse gears**
Gewicht des Wagens	**weight of the vehicle**	*Geschwindigkeit*	**top speed on roads**
Rahmen	**frame**	*Benzinverbrauch*	**fuel consumption**
Achsstand	**wheelbase**	*Oelverbrauch*	**oil consumption**
Spurweite vorn, hinten	**track front, rear**	*Bremsen*	**brakes**
Motor	**engine**	*Reifenbemessung*	**tyre size**
Zylinderdurchmesser	**cylinder diameter**	*Nutzlast*	**payload**
Kolbenhub	**piston stroke**	*Anhänger*	**trailer**
Leistung Steuer PS	**power, taxation hp**	*Ladefläche*	**load space**
Leistung Bemessungs PS	**power, real output**	*Bereifung*	**tyres**
Einlassventile	**inlet valves**	*Vollgummi*	**solid rubber**
Vergaser	**carburettor**	*Wagenkasten*	**cab**
Kühlung	**cooling**	*Plantuch*	**tarpaulin**
Kuppelung	**clutch**	*Steigung*	**gradient**

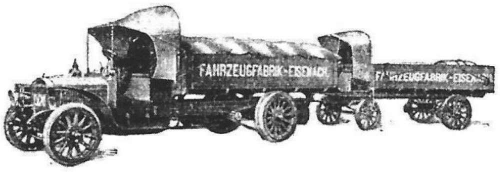
Daimler-Motoren-Gesellschaft

Zweigniederlassung Berlin-Marienfelde



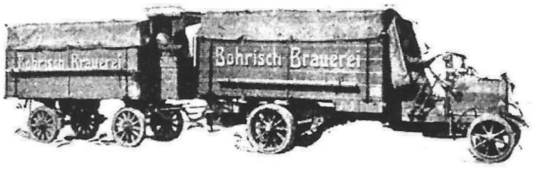
Bezeichnung der Wagentype: 5 t kriegsbrauchbarer Lastwagen
Höchste zulässige Belastung: 5000 kg
Gewicht des Wagens ohne Wagenkasten: 2900 kg
Rahmen: Gepresster Stahlrahmen
Achsstand: 4300 mm
Spurweite: 1540 mm
Motor: 4 Zylinder
Zylinderdurchmesser: 120 mm
Kolbenhub: 150 mm
Leistung nach der früher üblichen Bemessung: 35 PS effektiv
Einlassventile: Gesteuert
Zündung: Abreiss-
Zündstrom aus Magneto
Vergaser: Mit Drosselkolbenregulierung, System Daimler
Kühlung: Pumpe
Kühler: Mercedes-Bienenkorb mit Ventilator
Kuppelung: Doppelkonus
Getriebe: Schubvorgelege
Geschwindigkeiten: 4 vorwärts, 1 rückwärts
Uebertragung: Ritzel mit Innenzahnrad
Radachslager: Gleitlager
Oelung: Oelpumpe
Bremsen: Zahl: 2, Art: Getriebe- und Hinterradbremse
Benzinbehälter unter Druck der Auspuffgase
Bergstütze
Nutzlast: 5000 kg
Ladefläche: 4000 mm Länge, 2000 mm Breite
Bereifung: Vollgummi, Doppelreifen an Hinterrädern
Wagenkasten: Offen, geschlossen, mit Rungen, mit Plantuch
Steigungen: Kann Steigungen bis zu 13% befahren

Fahrzeugfabrik Eisenach



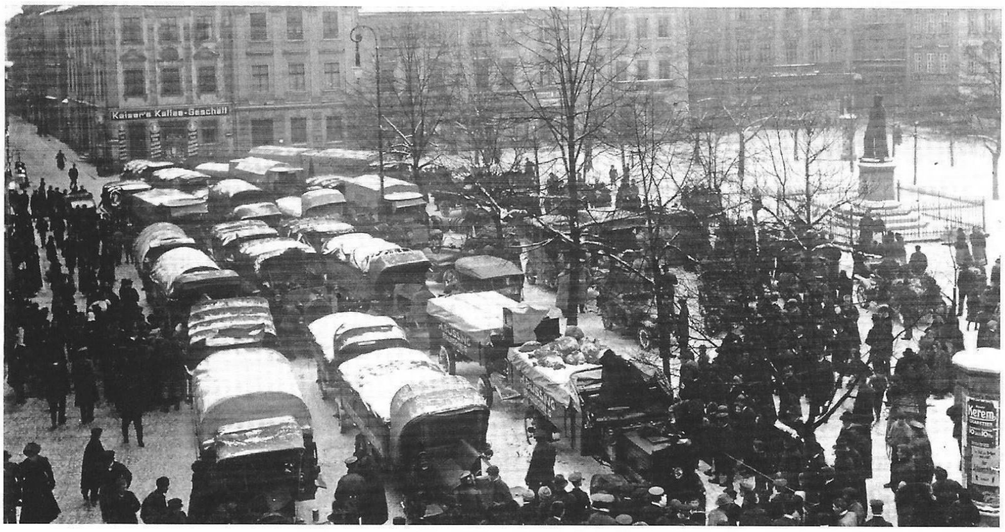
Bezeichnung der Wagentype: U O Lastzug mit Staats-Subvention
Höchste zulässige Belastung: ca. 5000 kg
Gewicht des Wagens mit Wagenkasten: ca. 4200 kg
Gewicht d. Wagens ohne Wagenkasten: ca. 3700 kg
Rahmen: Gepresster Stahlrahmen, vorn verjüngt
Achsstand: 4250 mm
Spurweite: 1720 mm vorn, 1820 mm hinten
Motor: 4 Zylinder
Zylinderdurchmesser: 120 mm
Kolbenhub: 150 mm
Leistung nach der Steuerformel: 26 PS.
Leistung nach der früher üblichen Bemessung: 40 PS
Einlassventile: Gesteuert
Zündung: Kerze. Doppelzündung, einkerzig
Zündstrom aus Batterie und Magneto
Vergaser: Eigenes System, selbsttätig mit Drosselung regelnd
Kühlung: Pumpe
Kühler: Dixi-Streifenkühler mit Ventilator
Kuppelung: Stahlblechkonus mit Leder
Getriebe: Schubvorgelege
Geschwindigkeiten: 4 vorwärts, 1 rückwärts
Direkter Eingriff bei Höchstgeschwindigkeit
Uebertragung: Kette
Geschwindigkeit des Wagens auf ebener Strasse:
Bei der 1. Geschw. 3¼ km
„ „ 2. „ 6½ „
„ „ 3. „ 12 „
„ „ 4. „ 16 „ in der Stunde
Benzinverbrauch für 100 km Fahrt bei mittlerer Belastung ca. 60 kg
Oelverbrauch für 100 km Fahrt ca. 2,5 kg
Radachslager: Gleitlager
Oelung: Umlaufschmierung, zwangläufig
Bremsen: Zahl: 3; Art: 1 Getriebe-Fussbremse, 2 Hinterrad-Hand-Innenbremsen
Benzinbehälter unter Druck der Auspuffgase
Bergstütze
Reifenabmessungen: Vorderräder 830 × 120 mm, Hinterräder 1030 × 140 mm doppelt
Nutzlast: 5000 kg und 5000 kg auf Anhänger
Ladefläche: ca. 4 m Länge, ca. 2 m Breite
Bereifung: Vollgummi. Doppelreifen an Hinterrädern, Eisenreifen am Anhänger
Wagenkasten: Offen, mit Plantuch
Steigungen: Kann Steigungen bis zu 15 % befahren, mit Anhänger für 3500 kg Nutzlast

Gebrüder Stoewer, Fabrik für Motor-Fahrzeuge, Stettin, Falkenwalder Chaussee

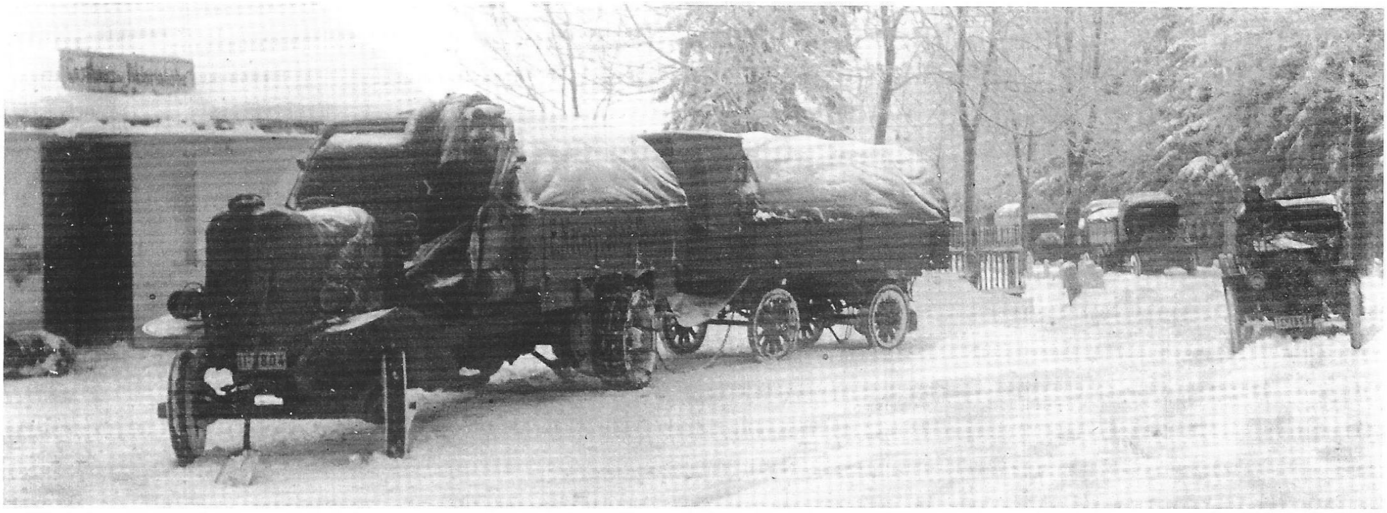


Bezeichnung der Wagentype: L 4 III, Geschäfts- oder Lastwagen
Sitzraum für 2—3 Personen
Höchste zulässige Belastung: 5000 kg
Gewicht des Wagens ohne Wagenkast.: ca. 3500 kg
Rahmen: Gepresster Stahlrahmen, vorn verjüngt, gekröpft
Achsstand: 4250 mm
Spurweite: 1690 mm
Motor: 4 Zylinder
Zylinderdurchmesser: 125 mm
Kolbenhub: 150 mm
Leistung nach der früher übl. Bemessung: 38 PS
Einlassventile: Gesteuert
Zündung: Kerze, einkerzig
Zündstrom aus Magneto
Vergaser: Patent G. A.-System, selbstt. regelnd
Kühlung: Pumpe
Kühler: Lamellenkühler mit Ventilator
Kuppelung: Lederkonus, gänzlich entlastet
Getriebe: Schubvorgelege
Geschwindigkeiten: 4 vorwärts, 1 rückwärts
Direkter Eingriff bei Höchstgeschwindigkeit
Uebertragung: Kette
Radachslager: Gleit-
Oelung: Oelpumpenapparat
Bremsen: Zahl: 3; Art: 1 Handbremse, 2 Fussbremsen
Benzinbehälter unter Druck der Auspuffgase
Bergstütze
Reifenabmessungen: Vorderräder 830 × 120 mm, Hinterräder 1030 × 140 mm, doppelt
Nutzlast: 5000 kg
Ladefläche: 4 m Länge, 1,90 m Breite
Bereifung: Vollgummi, Doppelreifen an Hinterrädern, Eisenreifen
Wagenkasten: nach Wunsch

02.2 Vergleichsfahrten / Comparative Trials



To determine the value of a truck design for military applications, and thus to become part of the subsidy scheme, the Imperial German Army held so-called *Erprobungsfahrten* (trial runs) – also called *Vergleichsfahrten, Prüfungsfahrten* or *Subventionsfahrten* – from 1908 to 1912. For these the manufacturers provided their individual designs to compete with other types. Military trial runs were held in Prussia, Bavaria, Austria, Hungary and Imperial Russia at this time. In Germany they mostly involved truck-trailer combinations.

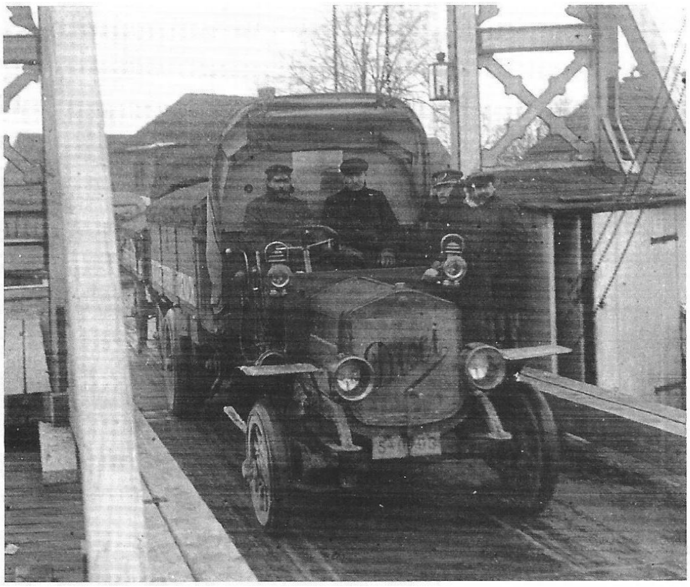


The photos on this and the next two pages were taken during one of these *Erprobungsfahrten*, presumably in 1909. This *Erprobungsfahrt* was held in the east in wintertime. After the column of trial vehicles had gathered in a city's marketplace (above), it began to roll under military conditions. Part of this *Erprobungsfahrt* were *Armeelastüge* of various makers, accompanied by passenger cars, presumably for the higher ranks. Note the brake operator's cab on the trailer of this Nacke truck-trailer combination.
Credit: Jochen Vollert Collection

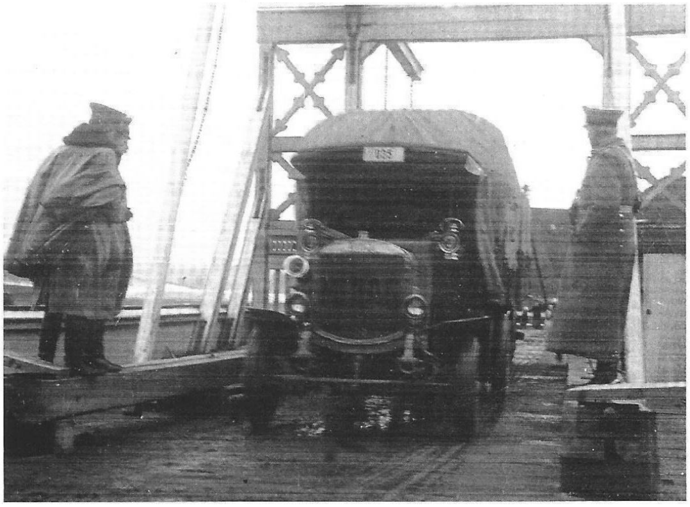
The participating *Armeelastzüge* were exposed to harsh climate and terrain to push them to the limits of their designs. More often than not, these limits became evident when a vehicle got stuck. As no designated recovery vehicles were available, another cargo truck had to come to the rescue or human muscles were required. Credit: Jochen Vollert Collection

Alexander Zawodny
Schneidermeister
Confection für Damen & Mädchen
Bäckerei & Mehlhandlung
Iamz Naumann

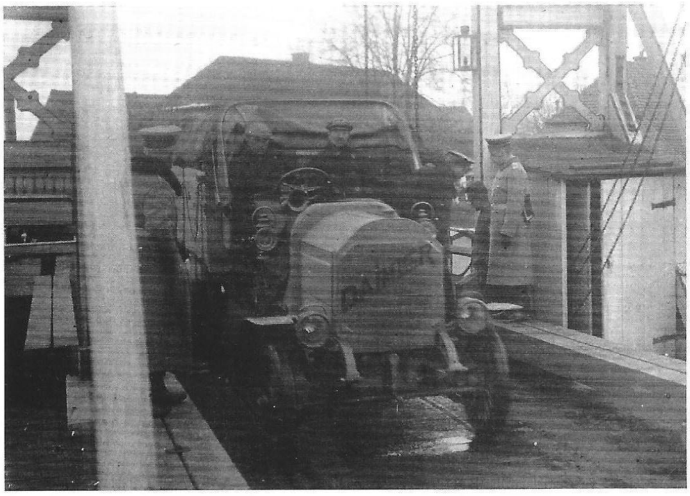
With no network of fuel stations available in the early 1900s, the column had its own *Benzin-Tankwagen* (petrol fuel tankers), in this case a *Büssing*.
Credit: Jochen Vollert Collection



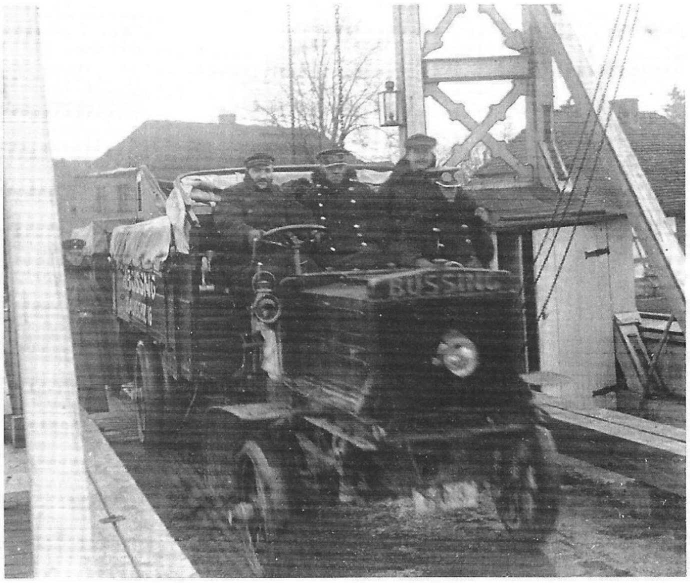
The *Armeelastzug* of the company Dixi.
Credit: Jochen Vollert Collection



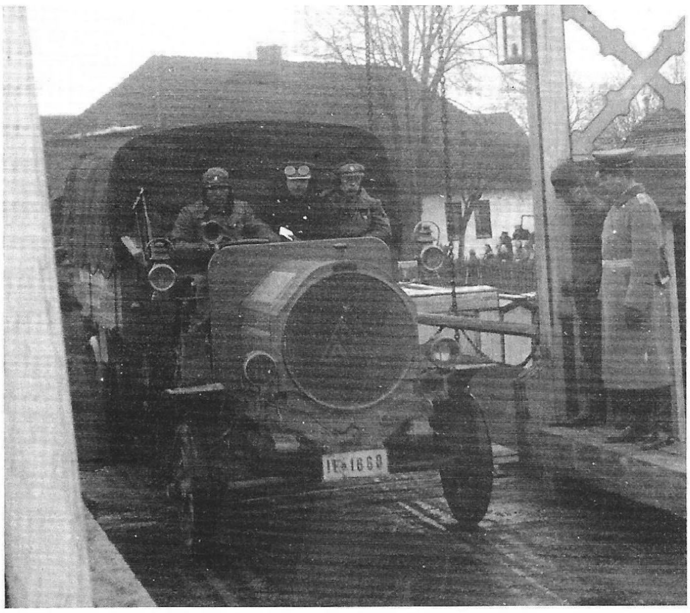
The *Armeelastzug* of the company Mulag.
Credit: Jochen Vollert Collection



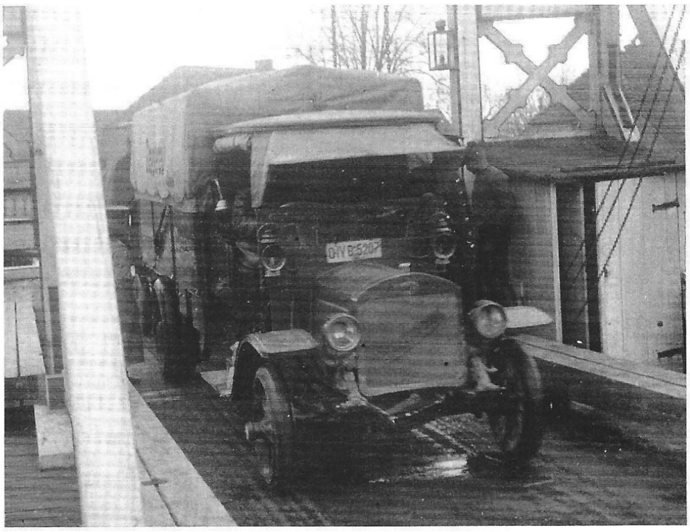
The *Armeelastzug* of the company Daimler.
Credit: Jochen Vollert Collection



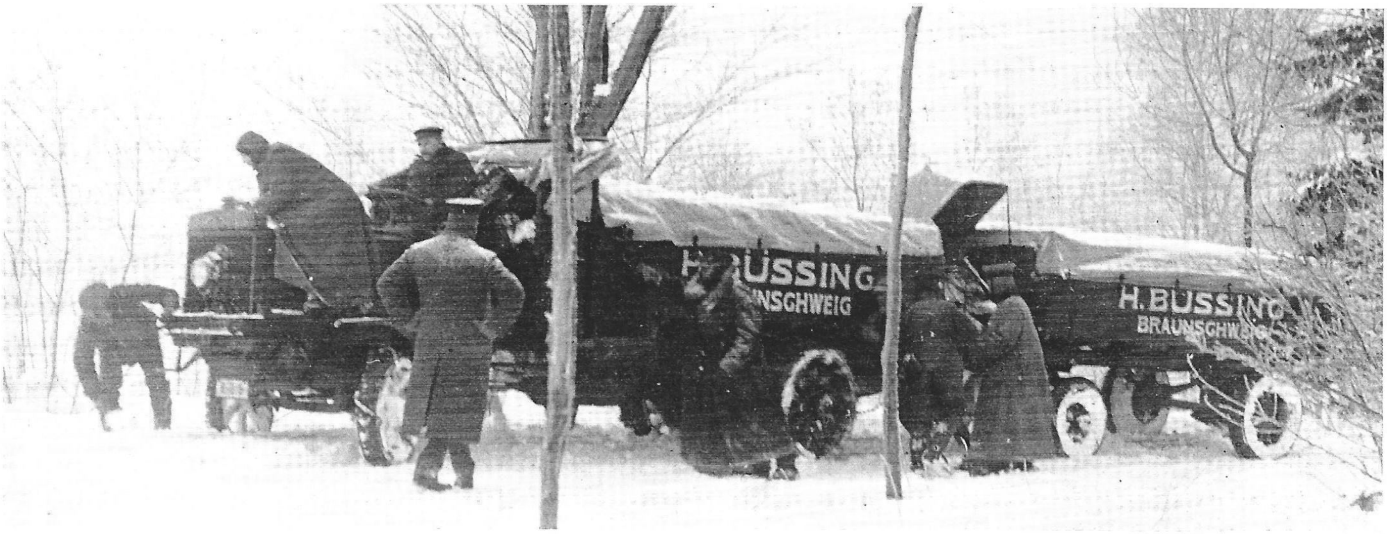
The *Armeelastzug* of the company Büssing. Note that the crews of all participating manufacturers were *Werksfahrer* factory drivers, prompted by the fact that no military driver training establishment had been founded before 1911. Credit: Jochen Vollert Collection



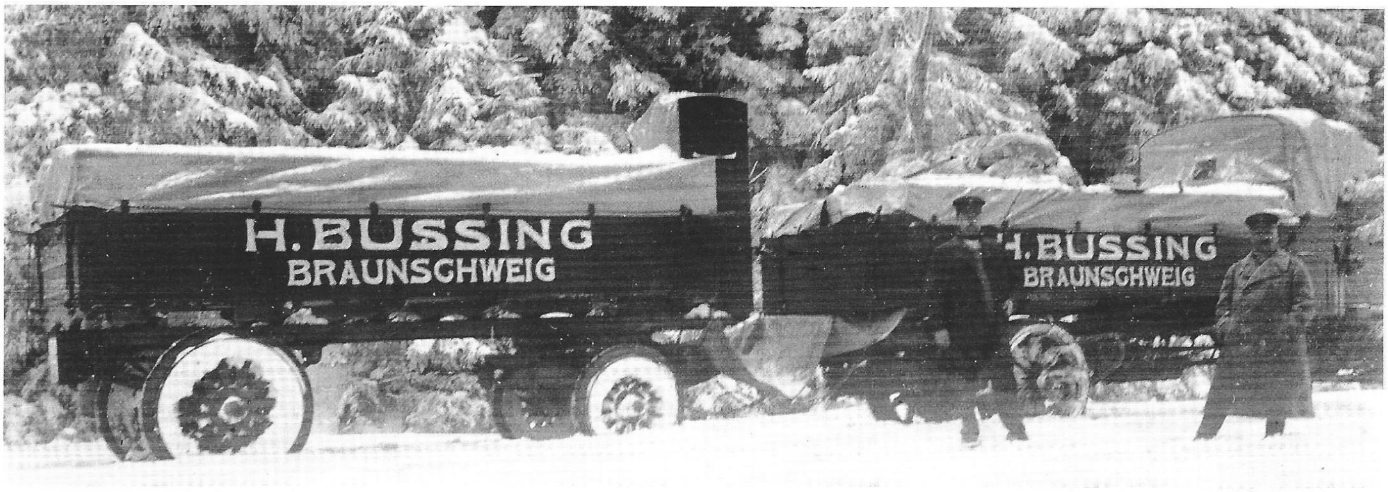
The *Armeelastzug* of the company NAG.
Credit: Jochen Vollert Collection

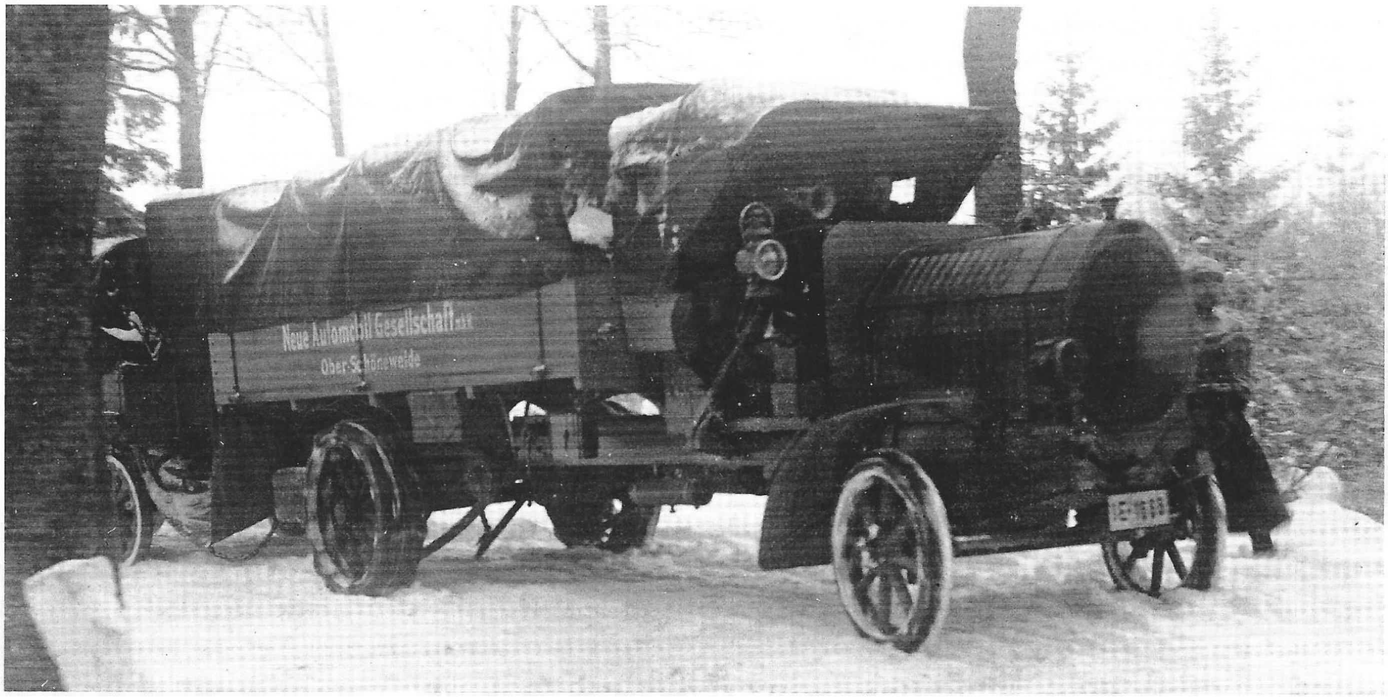


The *Armeelastzug* of the company Stoewer.
Credit: Jochen Vollert Collection

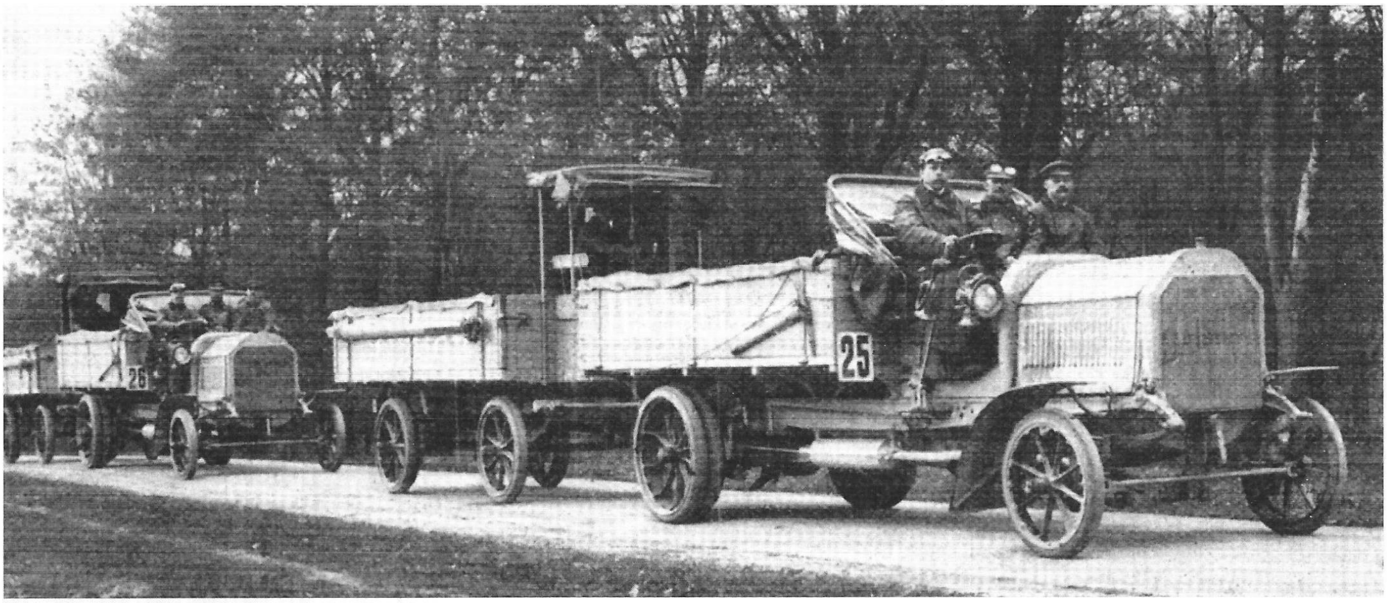

H. BÜSSING
BRAUNSCHWEIG
H. BÜSSING
BRAUNSCHWEIG

All these early truck designs featured only open cabs and they displayed relatively weak technical reliability. The military-grade *Erprobungsfahrten* were thus vital to define shortcomings of all sorts. The Büssing *Armeelastzug* in these two photos is battling its way through deep snow. Note that the vehicle crews are civilians sent by the manufacturers while the supervising staff is army personnel. Credit: Jochen Vollert Collection


H. BÜSSING
BRAUNSCHWEIG
H. BÜSSING
BRAUNSCHWEIG

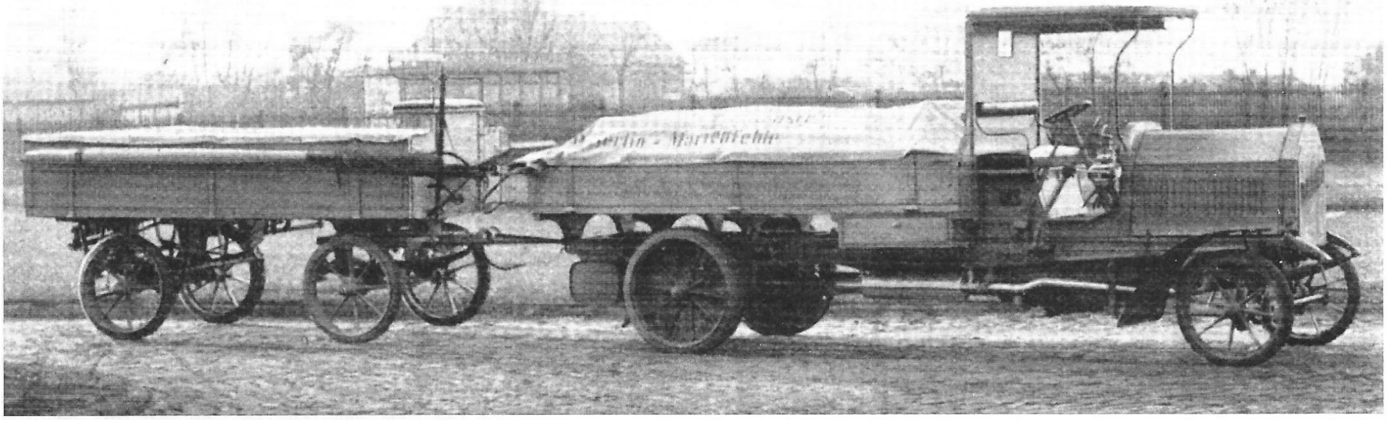

Neue Automobil Gesellschaft m.b.H.
Ober-Schöneweide

This contender from *Neue Automobil Gesellschaft (NAG)* features foul-weather protection for the cab, and it is fitted with snow chains. Note the spinning wheels! Credit: Jochen Vollert Collection



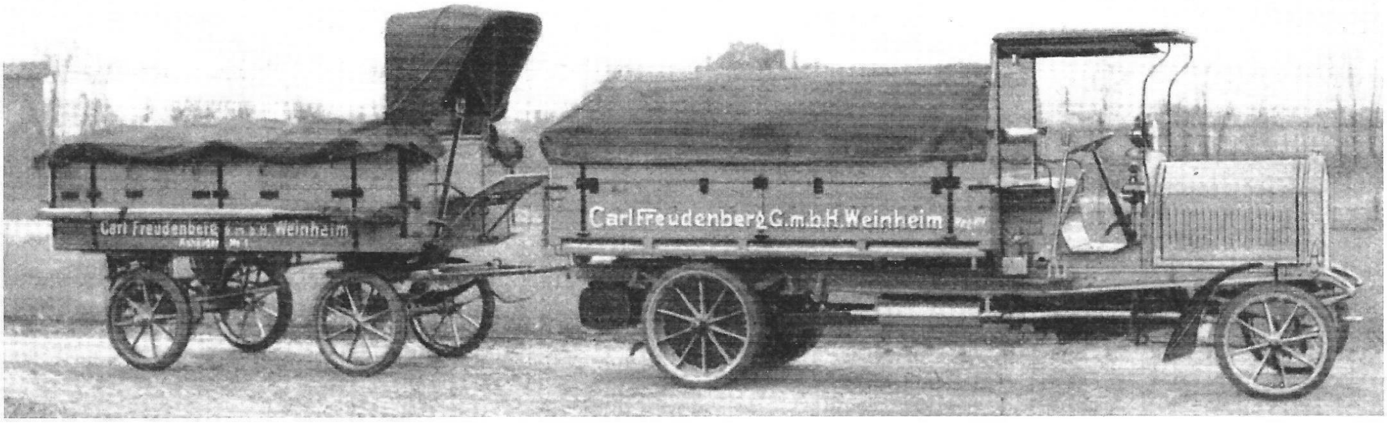
The *Erprobungsfahrten* succeeded various other trial runs and were held annually from 1908 to 1912. There was undeniable pride for the manufacturers competing for the Kaiser's army, and participating truck designs were often used in patriotic advertisements and publications. Shown here are Daimler 4-ton trucks and 2-ton trailers posing for a photo during an undated *Prüfungsfahrt der Verkehrstruppen* trial run. Interestingly, the two participating trucks have been given the numbers '25' and '26', underlining the size and importance of these trials.

Credit: Jochen Vollert Collection

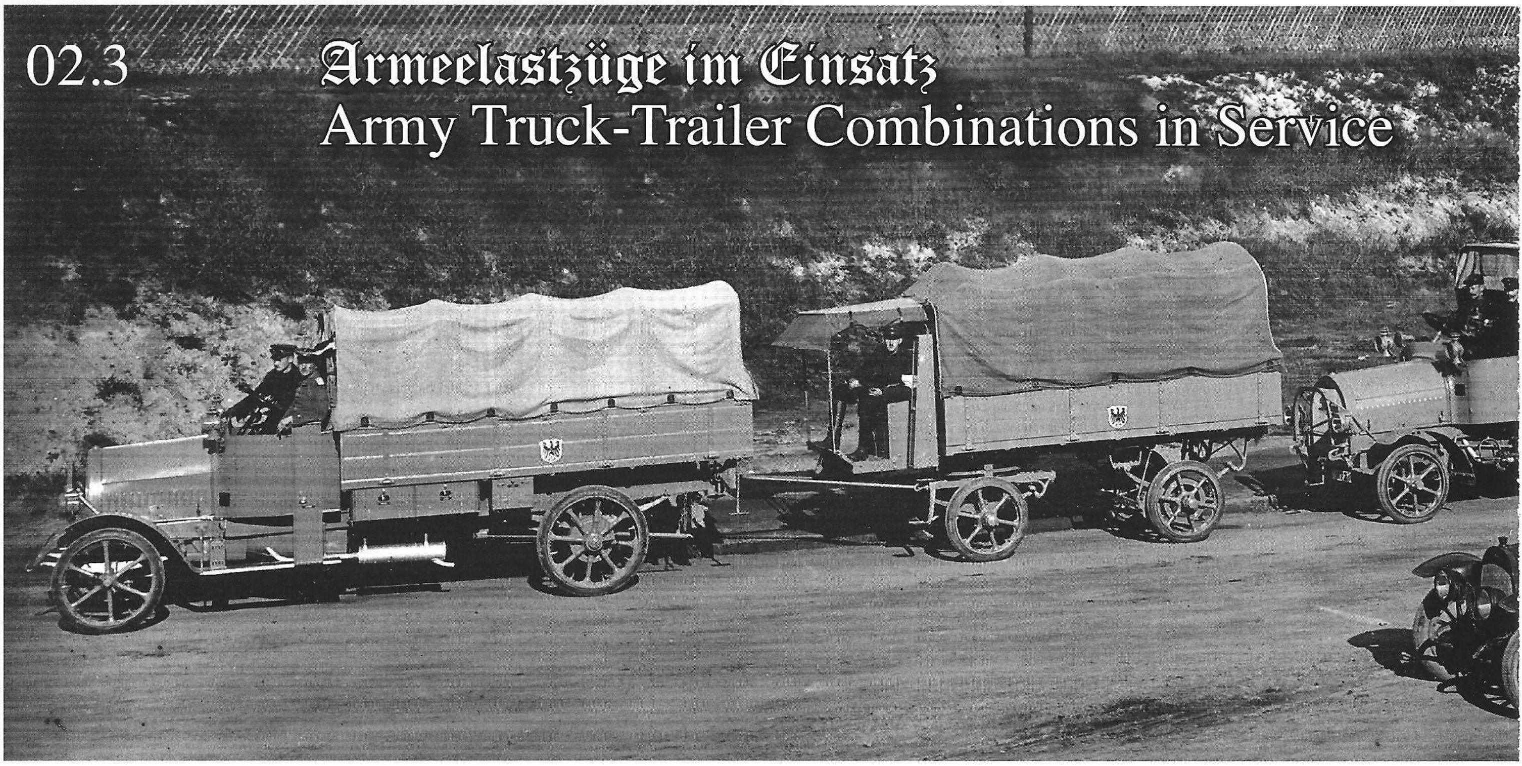


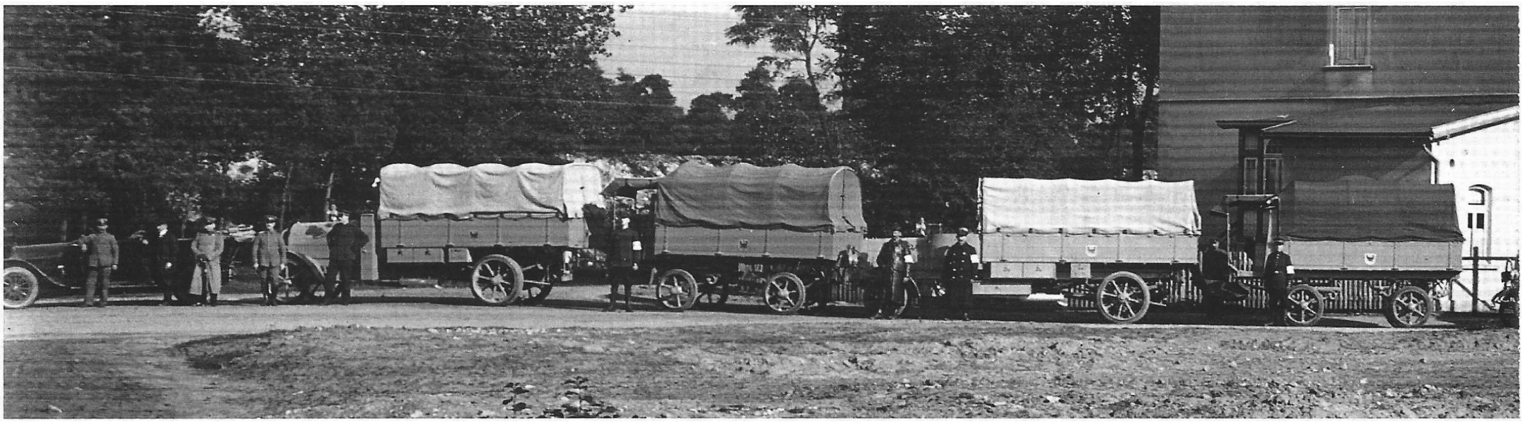
These two photos show other Daimler *Armeelastzug* competitors; note the differences in design of the truck's cargo bay as well as the trailer. The 3-ton to 4-ton trucks and single 2-ton trailer were at the time seen as a "light" combination, keeping in mind that the "heavy" *Straßenzug* road trains featured six trailers or more. Note the manufacturer's lettering on the truck above and the civilian motoring company lettering on the truck below.

Credit: Jochen Vollert Collection


Carl Freudenberg G.m.b.H. Weinheim
Carl Freudenberg G.m.b.H. Weinheim

02.3 Armeelastzüge im Einsatz
Army Truck-Trailer Combinations in Service

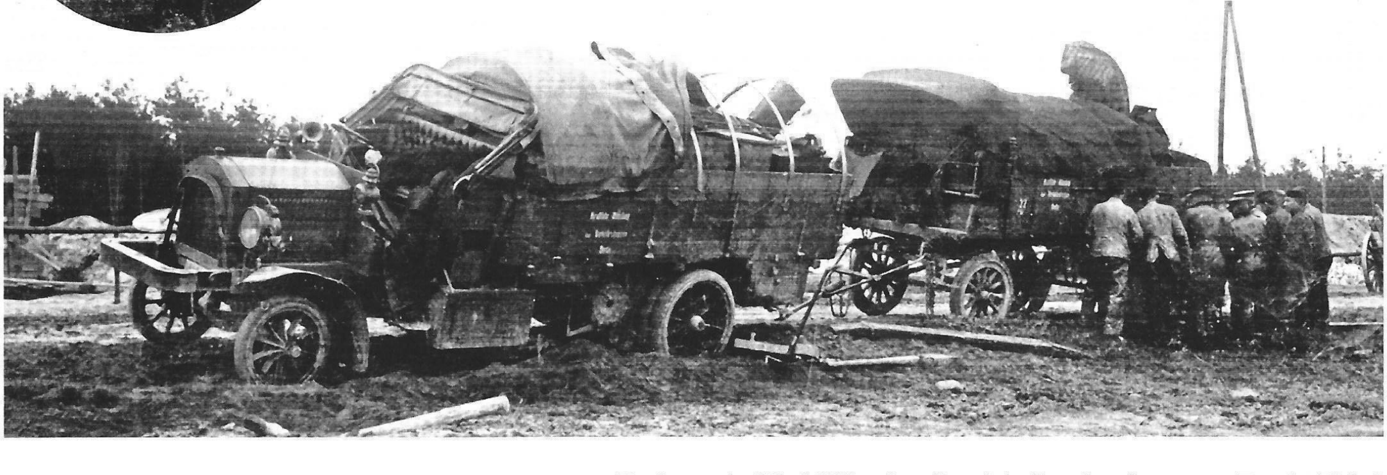


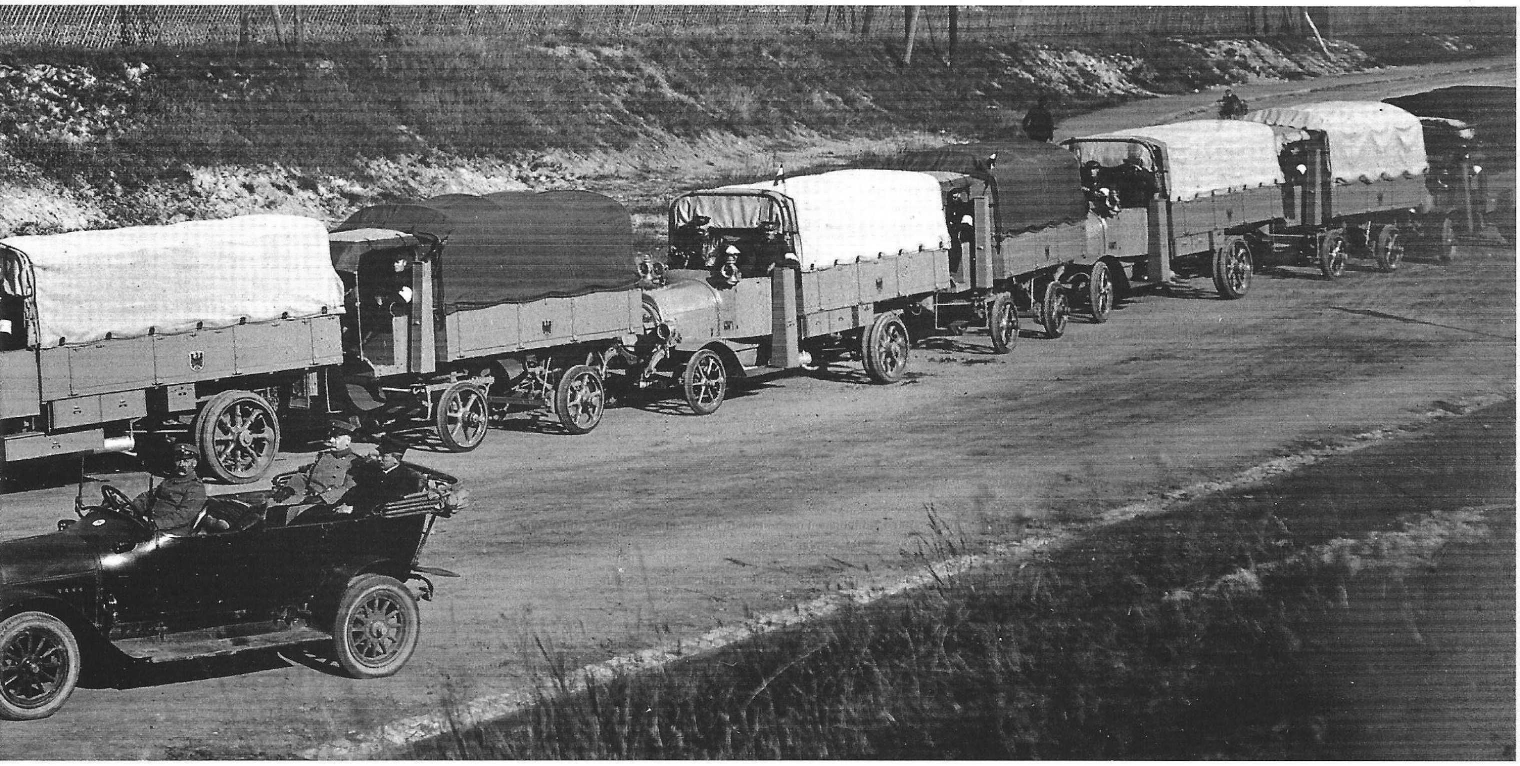


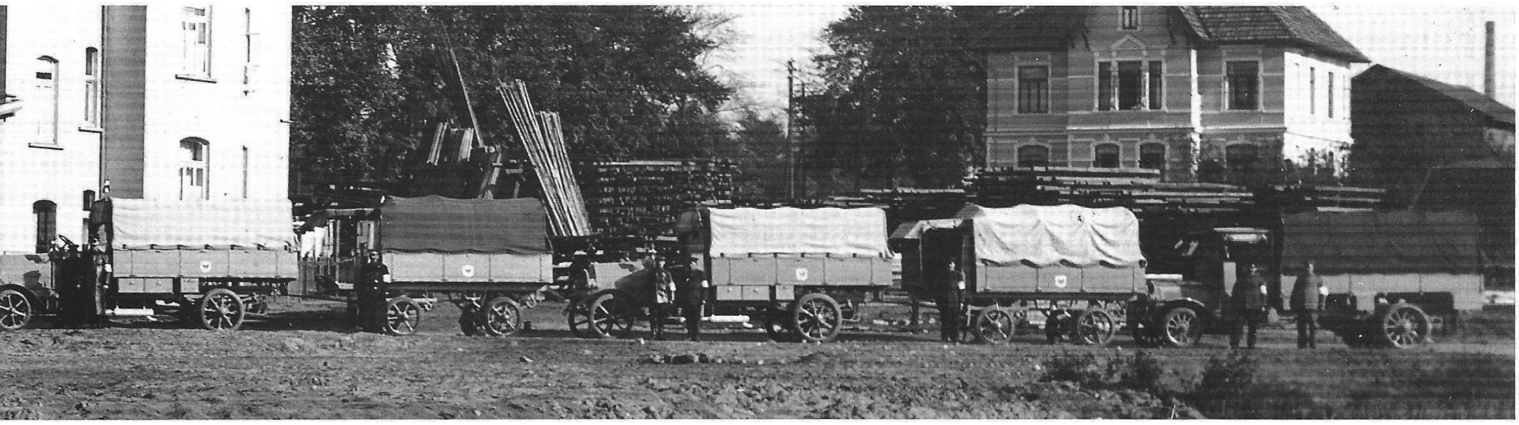
These two excellent photos show an entire column of *Armeelastzüge* truck-trailer combinations that have just been taken over by the army from the company Dürkopp. Note the brake operators sitting in their cabs on the trailers – this is a 1908-12 *Armeelastzug* type - and the varying tarpaulin colours. Credit: Jochen Vollert Collection

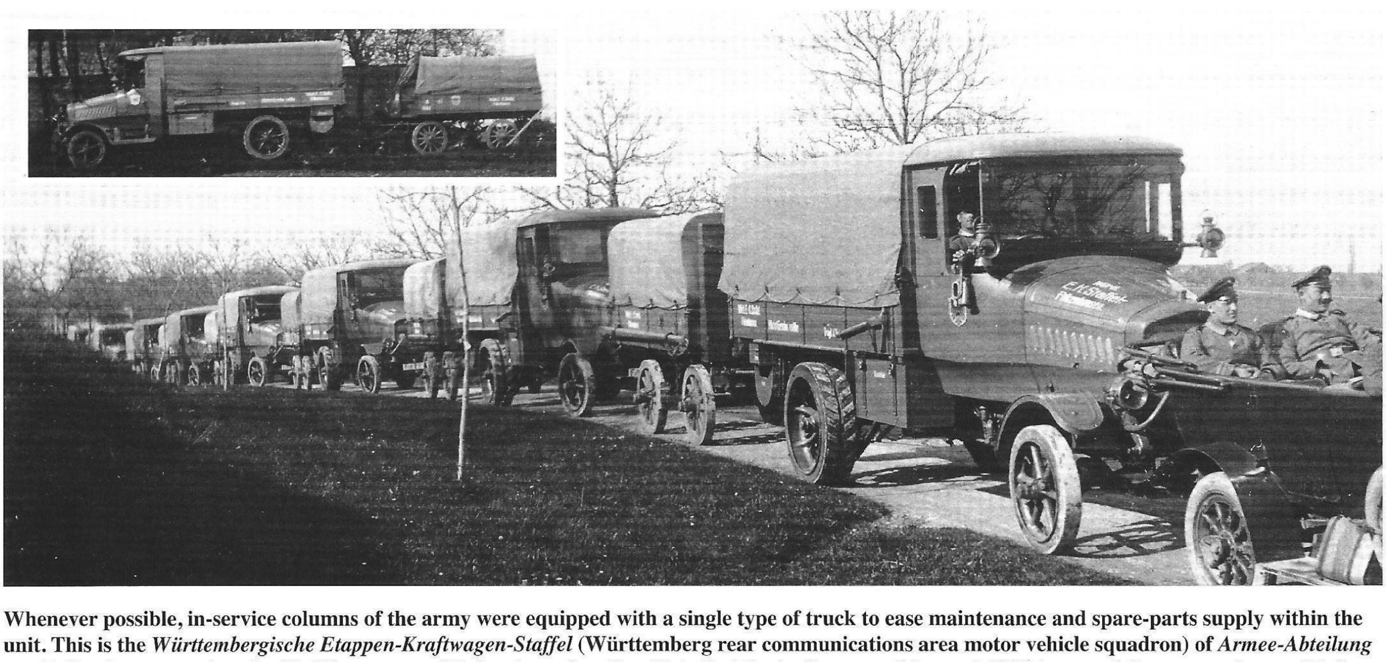
Kraftfahr-Abteilung
der Verkehrstruppen
Berlin

Although of rather poor quality, this photo shows rare markings: '*Kraftfahr-Abteilung der Verkehrstruppen, Berlin*' – motor vehicle detachment of the department of transport, Berlin – is on both sides of the cargo bays and partially visible on the tarpaulin (see inset). This formation was raised in October 1907 and became the predecessor of the *Kraftfahr-Bataillon* founded on October 1911. The truck is a Nacke presumably. Note the massive front bumper and the unusual round struts covering the cargo bay. Credit: Jochen Vollert Collection

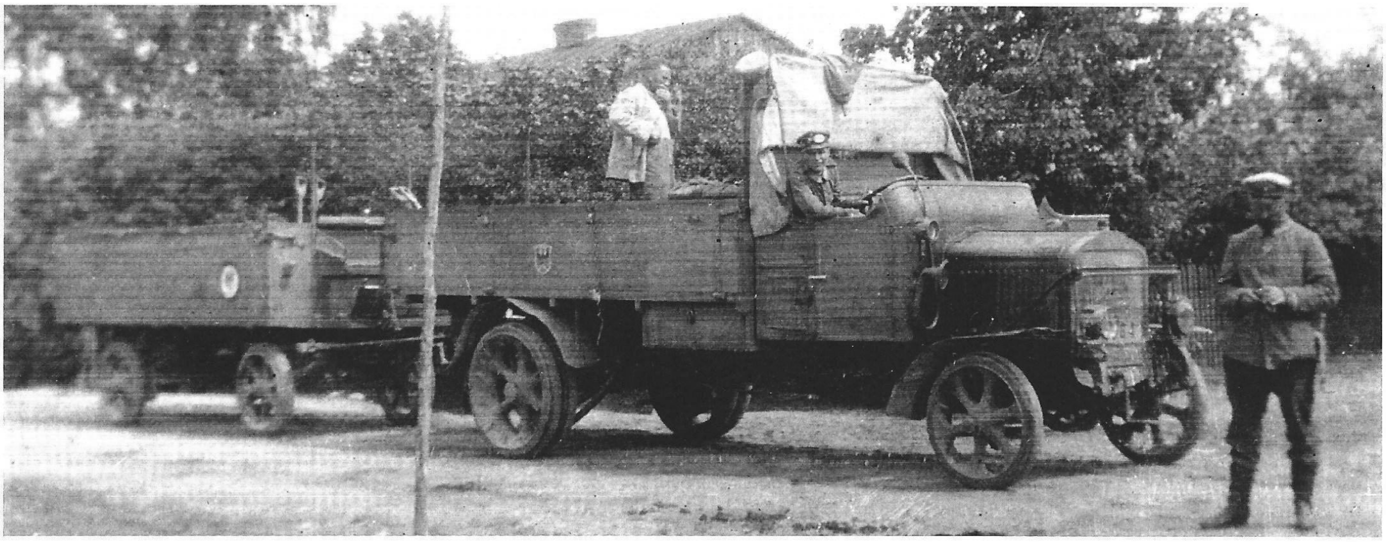




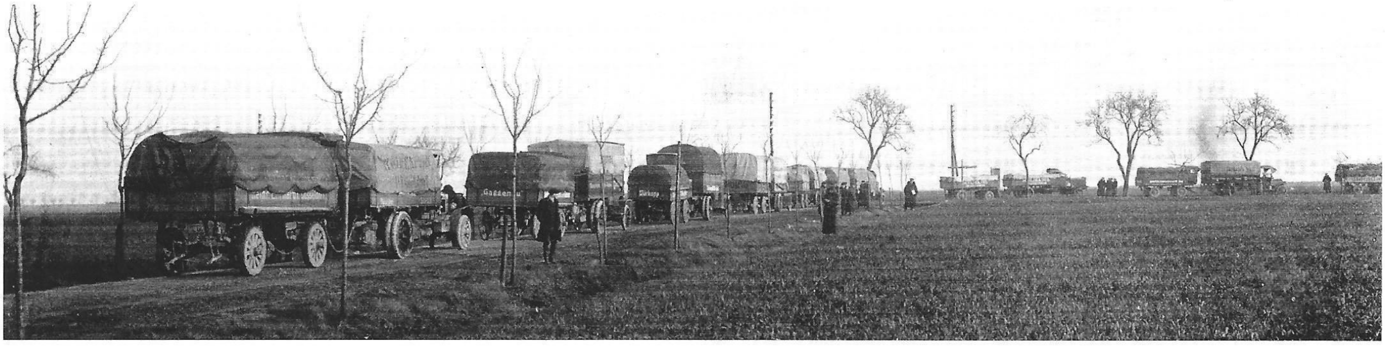




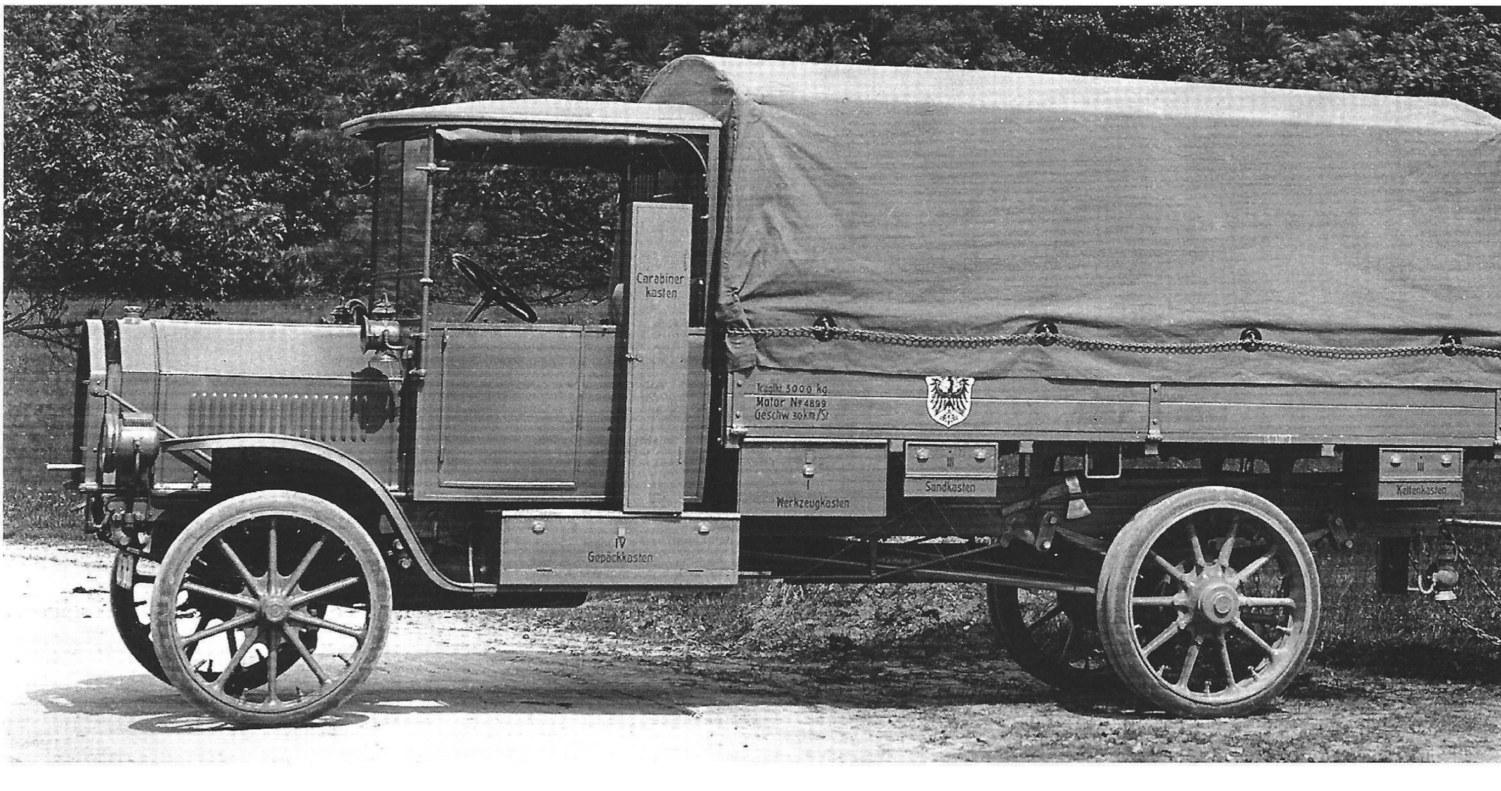
Whenever possible, in-service columns of the army were equipped with a single type of truck to ease maintenance and spare-parts supply within the unit. This is the *Württembergische Etappen-Kraftwagen-Staffel* (Württemberg rear communications area motor vehicle squadron) of *Armee-Abteilung von Falkenhausen* equipped with Mannesmann Mulag *Armeelastzüge*. Note that the trailers are of the post-1912 type, and they are no longer fitted with the brake operator's cab (see also inset). Credit: Jochen Vollert Collection

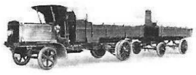


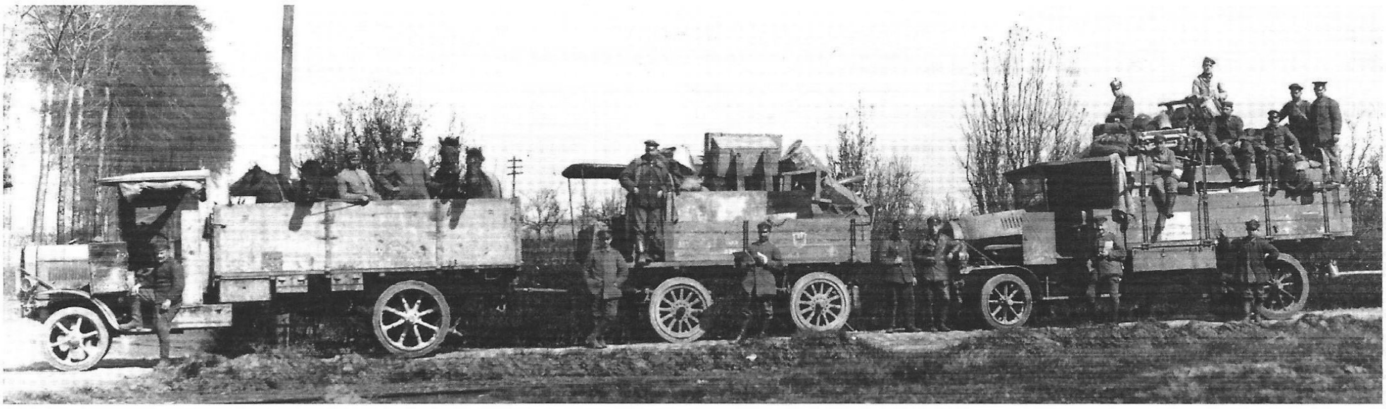
This is an early version DAAG *Armeelastzug* subsidy model with open soft-top cab and towing a 2-ton trailer. The scene shows DAAG's participation in the *Armeelastzüge* pre-war trial of 1911 or 1912 (note the civilian observer in the cargo bay). The number of DAAG subsidy trucks purchased by commercial customers is sadly not on file. Credit: Jochen Vollert Collection



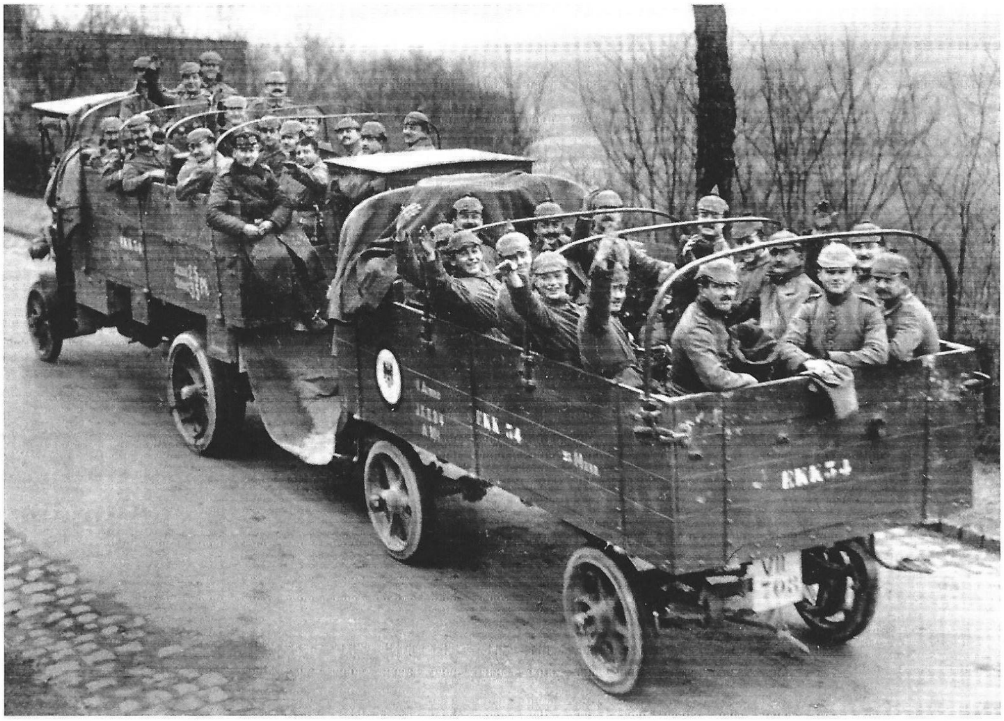
The whole column of an *Erprobungsfahrt* shows how a military column with *Armeelastzüge* was intended to look. Under wartime conditions, however, distances between individual vehicles would be much larger. While there are plenty of photos taken between 1914 and 1918 and showing solo trucks, the number of photos of this period with *Armeelastzüge* is unbelievably small. With battles soon entering the war-torn hinterland of the frontlines in Belgium and France, solo trucks without trailers became the better option. Trailers were relegated as useless, while their towing vehicles soldiered on. The four *Armeelastzüge* on the left are by Erhardt, Benz (Gaggenau), Dürkopp and Mulag. Credit: Jochen Vollert Collection


Carabiner kasten
Tragfkt 3000 kg.
Motor № 4899
Geschw 30km/St
I
Werkzeugkasten
III
Sandkasten
III
Kettenkasten
IV
Gepäckkasten

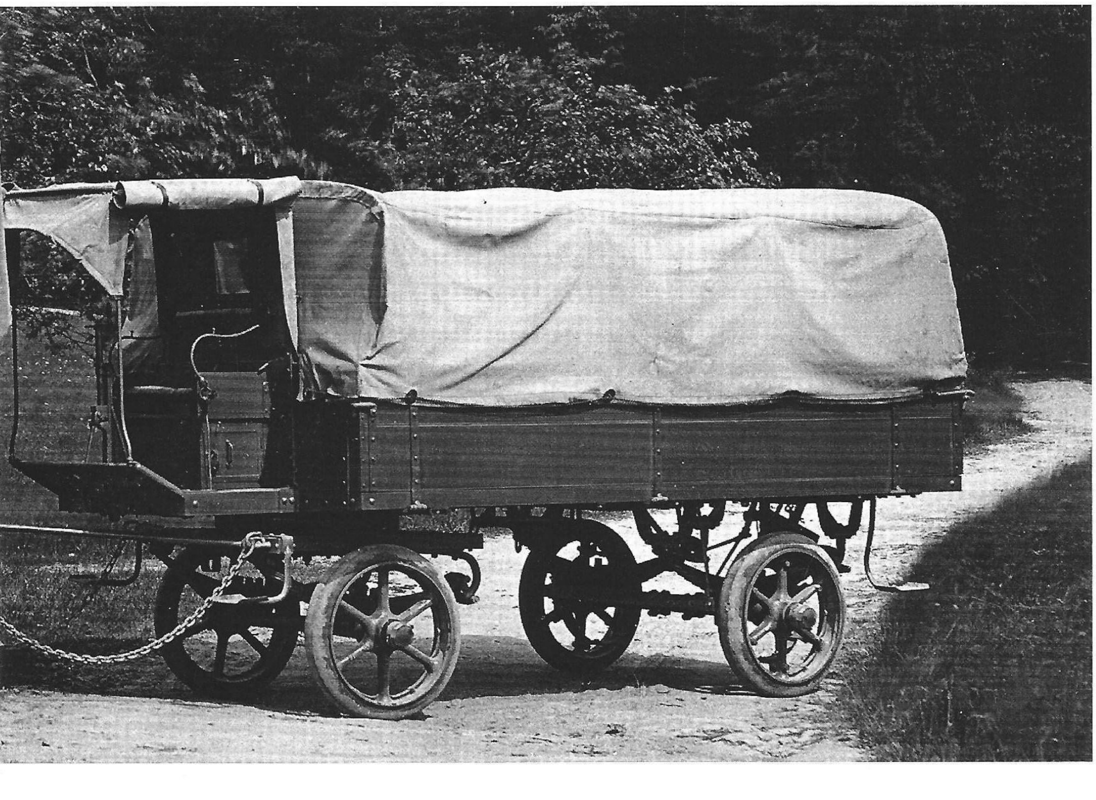




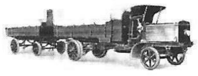
Taking the bent and battered condition of this Benz *Armeelastzug* into consideration, this certainly is one of the rare wartime photos showing a truck-trailer combination in actual military service. Note the load of cattle and horses on the truck on the left, while its trailer and the next truck seem to be loaded with military office furniture.
Credit: Jochen Vollert Collection



Definitely a wartime picture: A road march column with an *Armeelastzug* of unidentified make. Due to their technical limitations, the *Armeelastzüge* were mostly used only on hard roads behind the frontlines. Closer to those areas with bad roads and potential enemy fire, *Kavallerielastwagen* solo trucks took over their tasks from late 1914. The lettering reads *Etappen-Kraftwagen-Kolonne 34* of *Immobiles-Kraftwagen-Depot 34* and *25 Mann* payload. The licence plate is that of 7th Army. Credit: Jochen Vollert Collection



A splendid photo, taken at the Grafenwöhr Training Ground on 16 May 1917, shows a Benz-Gaggenau *Armeelastzug* 5-ton truck-trailer combination. The truck is still in factory-fresh condition, and the lettering on the boxes reads (from left to right): *Gepäckkasten* (luggage box), *Carabinerkasten* (carbine box), *Tragkraft 5000 kg*'(payload 5,000kg), *Motor Nr. 4899* (engine number), *Geschwindigkeit 30 km/St* (top speed 30km/h), *Werkzeugkasten* (toolbox), *Sandkasten* (sandbox) and *Kettenkasten* (chain box). Note the safety chains securing the trailer in case the drawbar becomes unhooked. Also note the brake operator's cab on the trailer. The use of four headlights was common for many German manufacturers of that era. The headlights next to the radiator usually burnt acetylene (which gives a strong white light) while the ones next to the windscreen are side lamps burning paraffin.
Credit: Jochen Vollert Collection



03. Heeres-/Regellastwagen - Army Solo Trucks

The Change to Solo Tucks

With the idea of the *Armeelastzug* truck-trailer combination turning out to be a failure due to the new face of war in the trenches, and with widespread logistical operations on bad roads in the hinterland of the frontlines, the concept of the *Heereswagen* military solo truck, based on the pre-war principle of the *Kavallerielastwagen*, took over from about 1915. However, with war in full swing there was no time to stop and develop a true tactical truck. In consequence, the outlines established for *Heereslastwagen* and *Regel-Lastwagen* as of 1915 became the criteria for a *Regel-Dreitonner* (standardised military 3-ton truck) in 1916 and were given as follows:

***Regel-Dreitonner* solo truck specifications as of 1916:**

- **Minimum 3-ton *(Dreitonner) Nutzlast* payload on hard roads. This figure was often reduced in the *Zuladung* or *Tragfähigkeit* for use on bad roads**
- **Reliable 4-cylinder petrol engine**
- **Sufficient engine power to reach 10-15km/h on hard roads**
- **Hardtop cab with windscreen and lowerable side screens to protect the crew**
- **Dual rear tyres, single front tyres**
- **Large enough cargo bay for the transport of supplies and soldiers**
- **Sufficiently sturdy design to withstand hard use**
- **Two to four headlights**
- **Rubber-rimmed wheels made of cast iron**
- **Chain-drive on the rear axle (later Cardan drive was also permitted)**

Note: These specifications were outlines and not binding for the manufacturer.

Not required were:	° Off-road capabilities
Impossible to sustain were:	° Interchangeable spare parts among different makes

With the costly *Armeelastzug* vanishing from army plans in 1915, and impressed commercial trucks neither available in the required quantity nor their design often robust enough for daily military duties (the Imperial German Army preferentially impressed trucks built from 1912-14, so older models remained scarce), those manufacturers active in truck design before the war focused their ranges on the new *Regel-Lastwagen* types and adapted their pre-war designs for that purpose. In addition, other companies launched their truck production based entirely on military contracts, though also based on the pre-war designs of their competitors rather than indulging in time-intensive and costly development of a true tactical truck for military applications.

A Huge Task for the Manufacturers

Taking into consideration that conveyor belt industrialised motor vehicle production had not yet been introduced in Germany, the output of German truck-makers, in comparison to the war effort elsewhere (e.g. in the UK and USA), Germany could not compete in terms of production figures. Ultimately, the output in *Regellastwagen* army trucks never reached the demanded quantity, and impressed civilian truck types, as well as existing *Armeelastzüge* minus their trailers, supplemented each other to create a flamboyant multiple-type army motor pool that created a logistical nightmare in terms of spare parts.

German truck production in World War One reached its peak in 1916. From then on, truck production was further hampered by a shortage of raw materials that severely limited the service life of vehicles: rubber-rimmed wheels were replaced with steel-rimmed or wooden-rimmed ones, and from 1918 even by full-steel *Kriegsbedingte Notbereifung* emergency tyres were introduced. Cast iron replaced scarce aluminium, and cast steel replaced bronze or brass. The much reduced quality of materials caused significant additional wear and tear on vehicle mechanical components, further reducing their service life. Cardan-drive trucks had to be replaced with chain-drive types, and leaf spring suspension had to be reinforced by additional coil springs to absorb the stronger shocks of harder tyres on bad roads.

All in all, approximately 38,000 trucks were built for the army by a multitude of German manufacturers, and here is a guideline to the following chapters in alphabetical order of manufacturer:

Legendary Makes

By sheer numbers of trucks produced for the military, Benz is certainly on top of the list with about 5,000 trucks manufactured, followed by Büssing, Daimler and Opel, each in the 3,000-4,000 range. Noteworthy here is also the company Hansa-Lloyd which, on paper, built over 10,000 trucks - a figure not supported by any pictorial evidence.

The list of manufacturers also contains German truck-building legends, first and foremost Büssing, yet also Horch, Mannesmann-Mulag, Nacke and Stoewer – names that today have all faded into history.

Other World War One suppliers to the Imperial German Army are still going strong today: Daimler-Benz and MAN (RMMV) are the mainstay of military trucks in the modern German Army, the Bundeswehr.

There were also a number of makers that commenced truck production for the German war effort only, among them famous names such as Magirus, MAN-Saurer and Vomag.

Despite the relatively small quantities some provided for the army in World War One, manufacturers such as Ageka, Bergmann, Komnick, Union and Windhoff to name just a few, add a lot to the myth of this early era of motoring in 1896-1918 during which more than 100 (!) German commercial-vehicle manufacturers contributed to the birth of the German motor industry*.

The Loose Ends

More than 100 years have passed since the end of World War One, yet it needs to be noted that this two-volume publication about *Lastkraftwagen* of the Imperial German Army is the first ever publication covering trucks of this period in a comprehensive way. Over 20 years of research and collecting went into this project to make it visually stunning and the text informative, although there is still unknown territory to discover.

As per written documentation, the following manufacturers joined *Regel-Dreitonner* production in 1915-18, yet in-service photos, or in some cases any pictorial evidence whatsoever about their specific designs, are lacking. Therefore, it is impossible to add them to this publication: Oryx, Erhardt, Fafnir, Frankfurt, Simson, Protos, Rex-Simplex, NSU, FAUN and Güldner.

---

* See Further Reading on page 96

03.1 Adler / Adler Trucks

Founded in 1880 in Frankfurt am Main under the name Kleyer-Werke, the manufacturer began to produce typewriters under the trademark Adler from 1886. Soon adding to typewriters was the production of bicycles, which led in 1895 to its renaming as Adler Fahrradwerke (Adler Bicycle Works). In 1899 the Adler-Werke added the manufacturing of passenger cars using French deDion engines to its typewriter and bicycle ranges. Shortly after the turn of the century, a fire engine and light commercial vehicles (on reinforced passenger car chassis) were added to its catalogue of products. Adler-Werke vormals (formerly) Heinrich Kleyer AG, such was the full official company designation as of 1907, finally turned to the production of commercial trucks in 1907, albeit on a limited scale (only about 250 up till 1912). The first *Lastkraftwagen* were in the 1.5-ton, 2-ton and 3.5-ton payload classes with 4-cylinder engines of 30hp. In 1908 followed a 3-ton model that could be equipped with either a 4-cylinder 15hp or a 4-cylinder 20hp engine, both with a displacement of 2009cc.

After these purely commercial trucks, Adler turned to the production of military vehicles to join the *Armeelastzüge* subsidy truck invitation-to-tender. The 1912 range comprised:

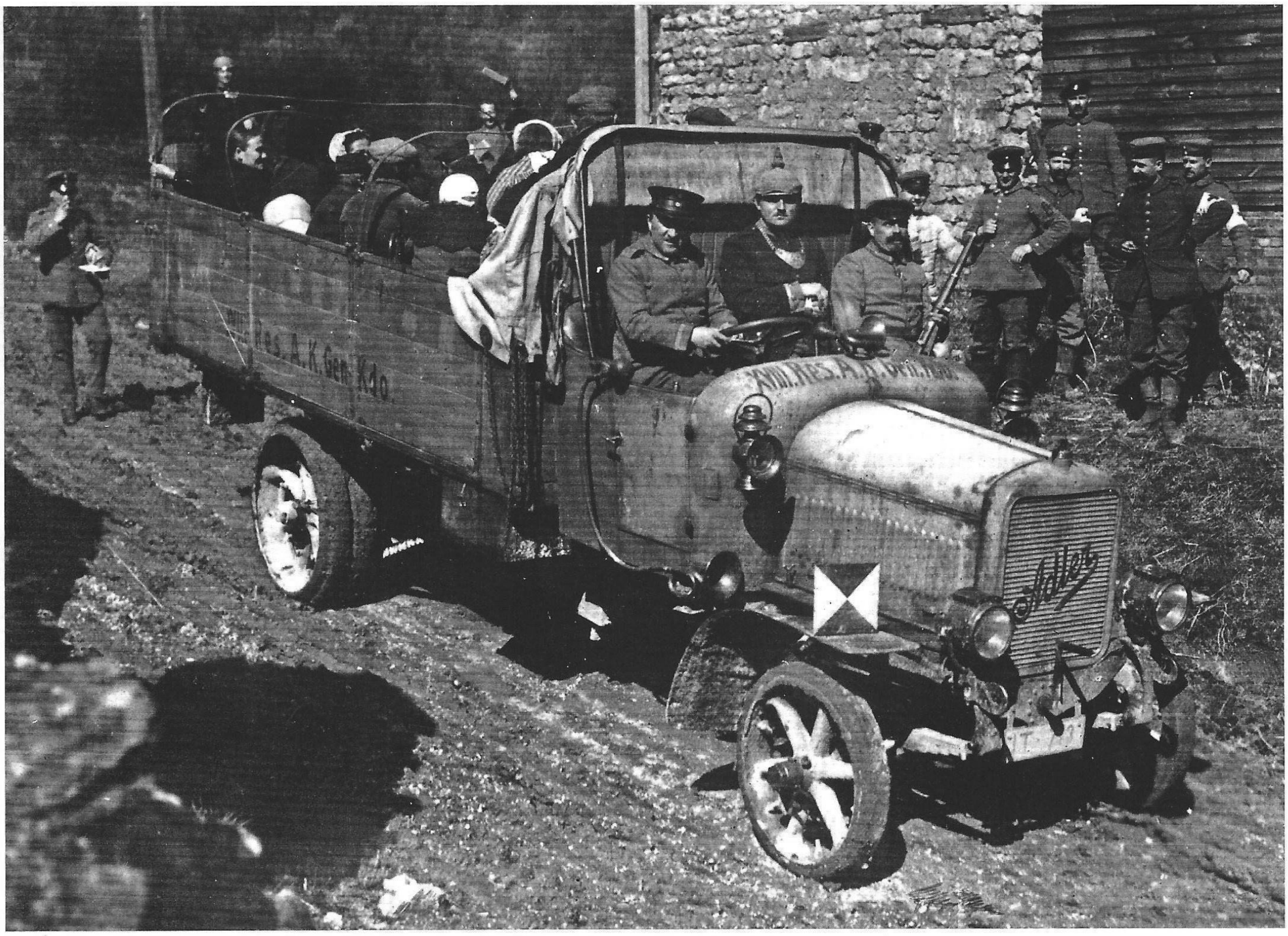
°	3.5-ton	*Lastwagen*	powered by a 4-cylinder 25hp 4673cc engine	
°	2.5-ton	*Subventions-Armee-Lastzug*	powered by a 4-cylinder 20hp 3433cc engine to tow a 2-ton trailer	
°	4-ton	*Subventions-Armee-Lastzug*	powered by a 4-cylinder 40hp 6529cc engine to tow a 2-ton trailer	(50 built from 1912-14)

For the 4-ton version, aside from the standard chain drive, a Cardan drive was also available.

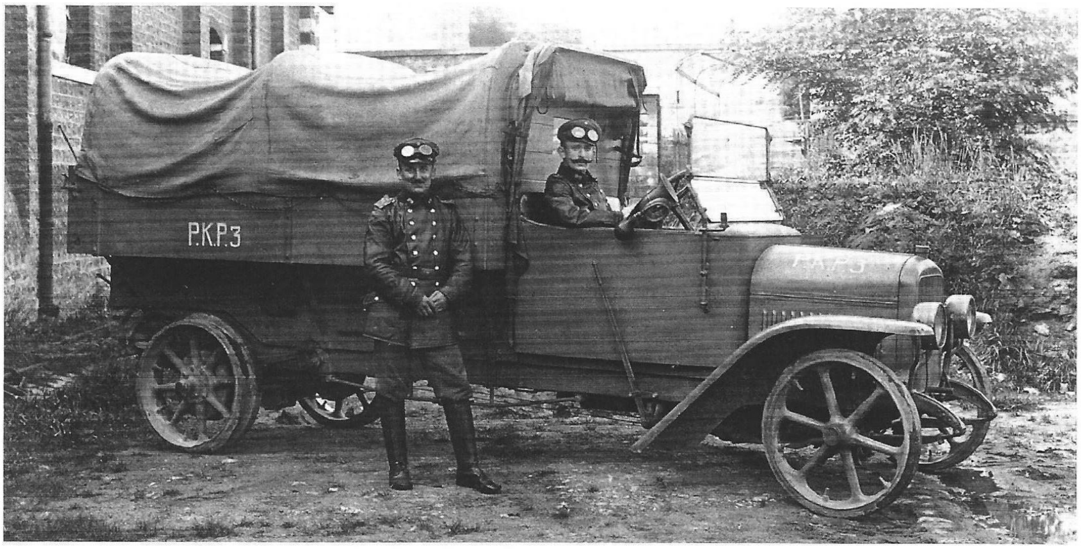
°	L3	3- to 4-ton	powered by a 4-cylinder 45hp 5927cc engine	(780 built from 1914-18)

Later in the war Adler built a truck with a completely different radiator design about which very little is known, presumably it was based on the L3.

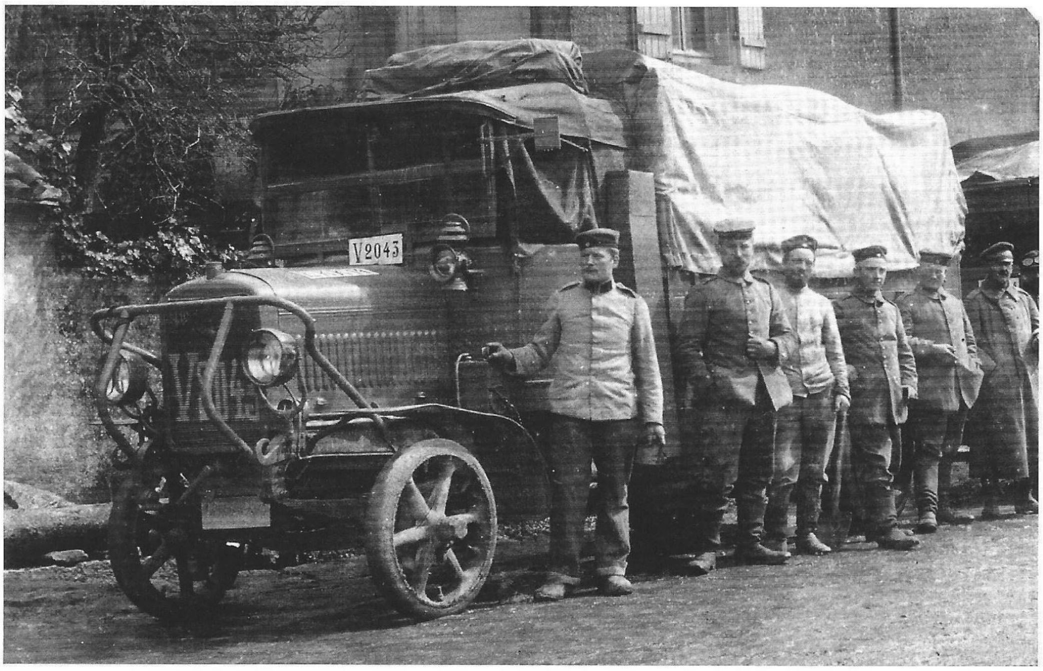
Recent research estimates the total of Adler trucks built from 1907-18 at 1,238 only. Some 900 of these were manufactured from 1914-18.



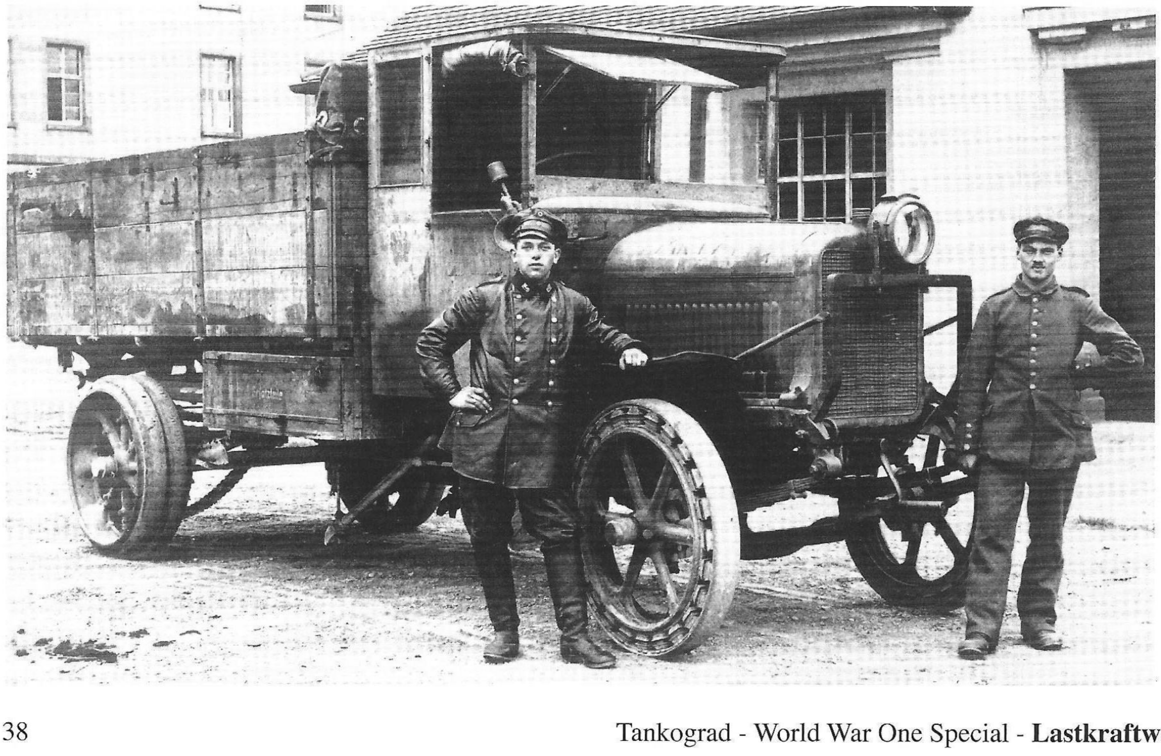
This is an impressed commercial 3.5-ton type of 1912 that features civilian components such as the Adler logo on the radiator and only a very small toolbox under the left side of the cargo bay. The lettering stands for *XVIII Reserve Armee Korps des General Kommandos* has been applied on the cargo bay sides and repeated on the bulkhead behind the bonnet. Note also the civilian soft-top and that the vehicle features right-hand drive, typical for German trucks of that period. Both driver and assistant driver do not wear the *Fahranzug* of the *Kraftfahrtruppe* but the standard field tunic, and they are accompanied by soldier of the military police guarding the "load" of civilians. The photo is dated May 1915. Credit: Jochen Vollert Collection



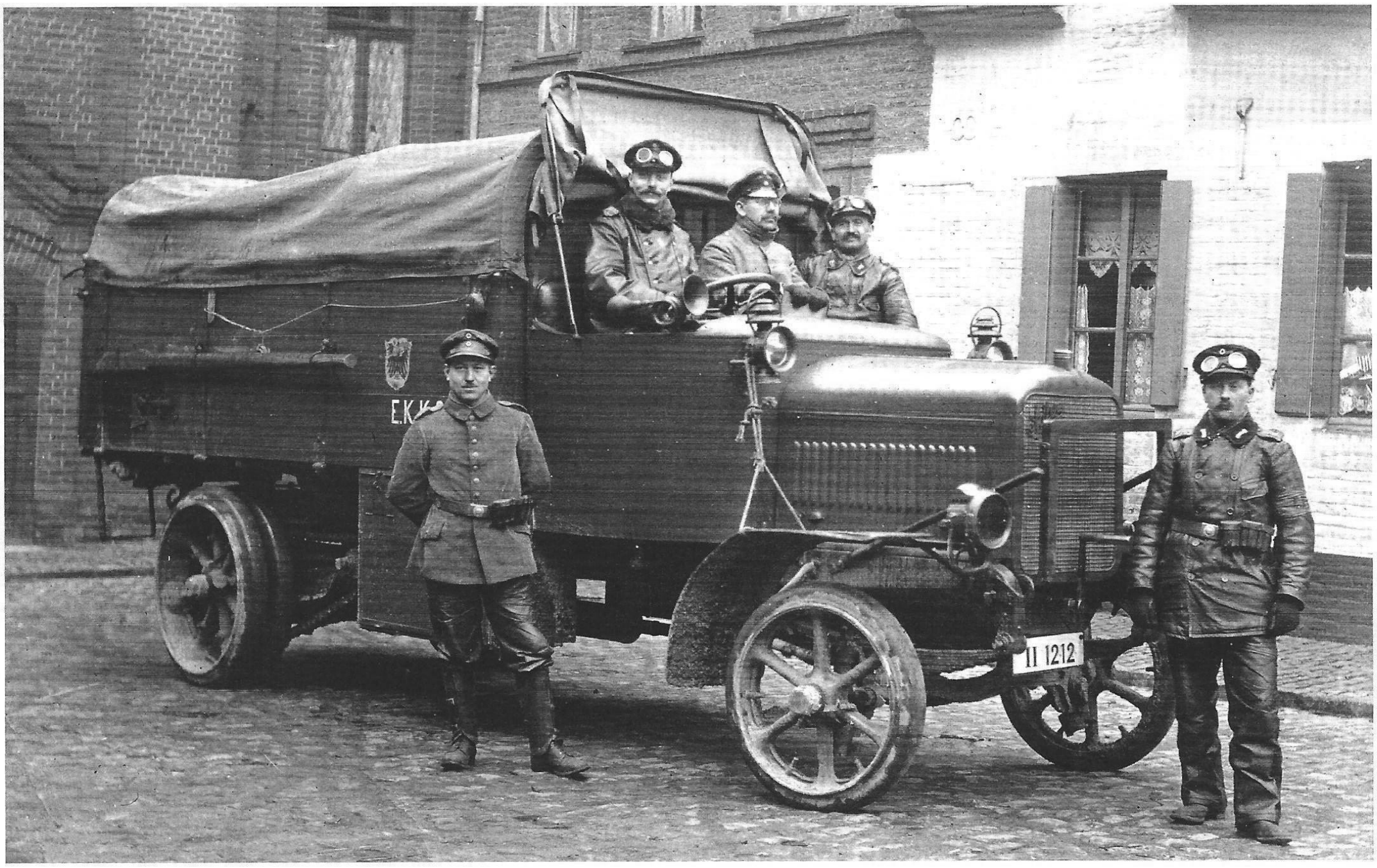
The shorter chassis, and the cargo bay with only two rather than three sections, here identifies the Adler 2.5-ton subsidy truck of 1912. As this type was extremely scarce, it is assumed that production was halted in the same year in favour of the larger 4-ton military truck. Note the very bad rubber-rimmed rear tyres and the *P.K.P. 3* marking that denotes *Post-Kraftwagen-Park 3* (field mail service motor park) of 3rd Army. Credit: Jochen Vollert Collection



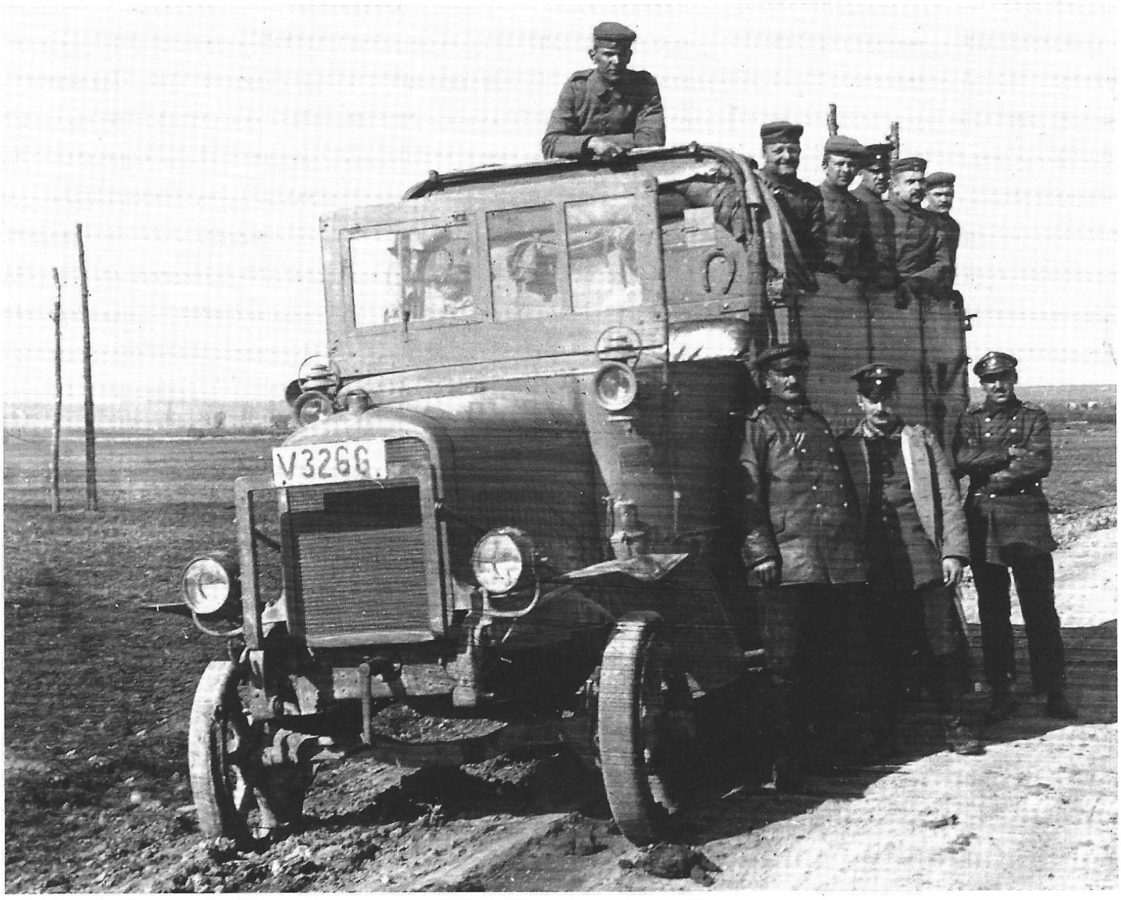
A typical problem of World War One photos is that they were made as memorabilia for the soldiers not for technical documentation. In this case the soldiers prevent proper identification of the cargo bay, yet the folding softtop, the Adler logo on the radiator and the highly unusual "bull bar" on the front once more point towards an impressed commercial vehicle. The marking on the radiator and on the placard in front ot the windscreen reads *V 2043* for 5th Army, vehicle no. 2043. The carbine box on the assistant driver's door holds the rifles of the crew. Credit: Jochen Vollert Collection



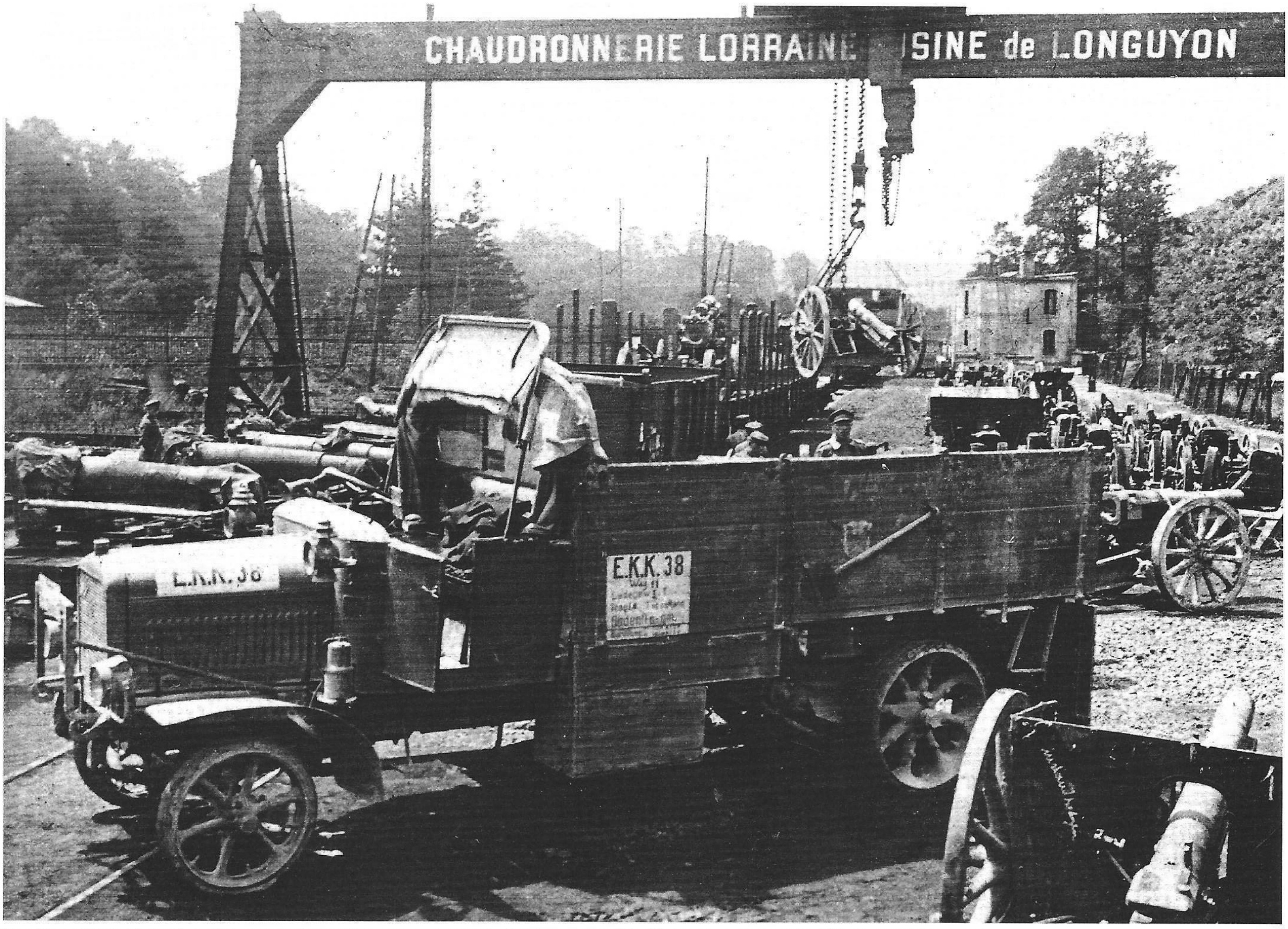
Another Adler 4-ton truck from pre-war production, and presumably from civvy street. Note the unusual toolbox. Of particular interest on this truck is the refitted single headlight on the radiator guard. The photo was taken in 1918, as the front axle has received *Kriegsbedingte Notbereifung* (emergency wartime tyres – a steel tyre cushioned with rubber set in cups) that were introduced because of a rubber shortage towards the end of the war. Credit: Jochen Vollert Collection

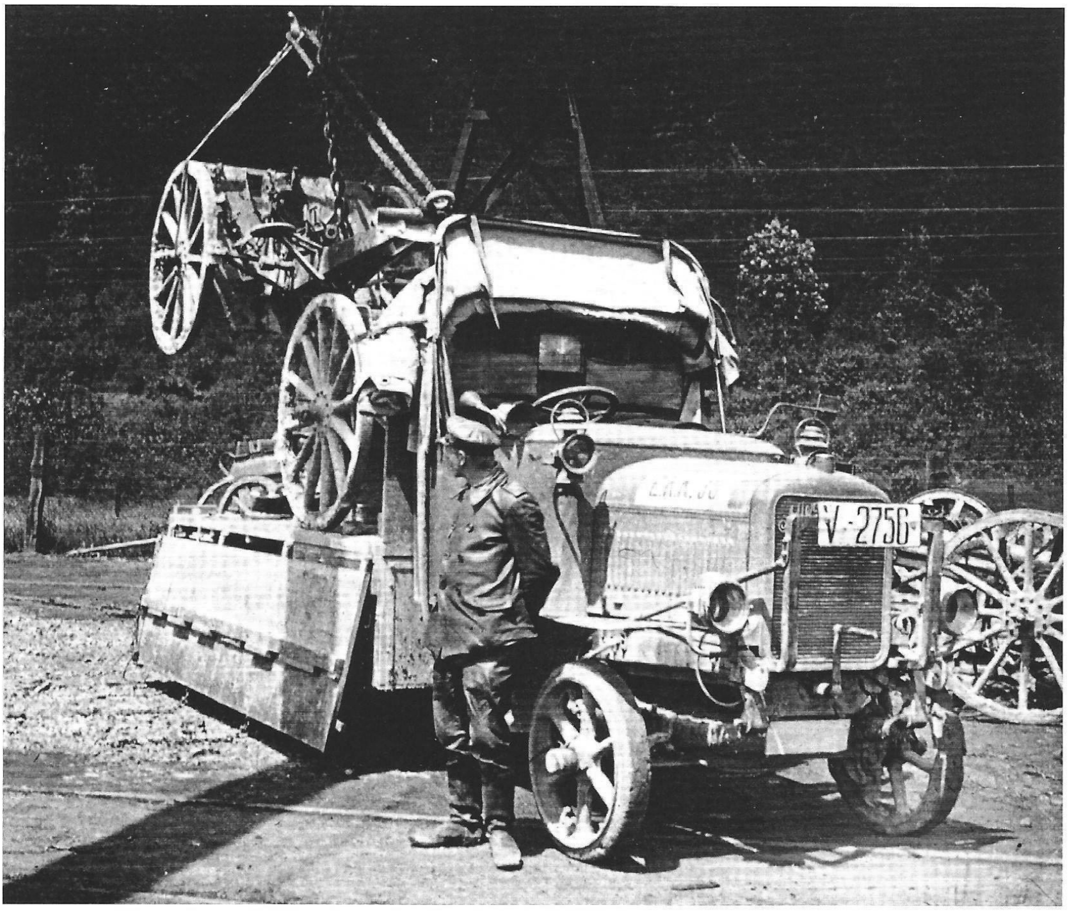


This Adler 4-ton truck carries military equipment on the cargo bay sides and in the enlarged stowage boxes beneath, yet it is equipped with a foldable soft-top rather than the military standard-issue closed cab. The Adler logo on the radiator front points towards a civilian version refitted with military equipment. Note the Prussian crest and the licence plate of *II Armee*. Note the mounting screws for the tyres' rubber bandages visible in-between the spokes. The photo is dated May 1915. Credit: Jochen Vollert Collection



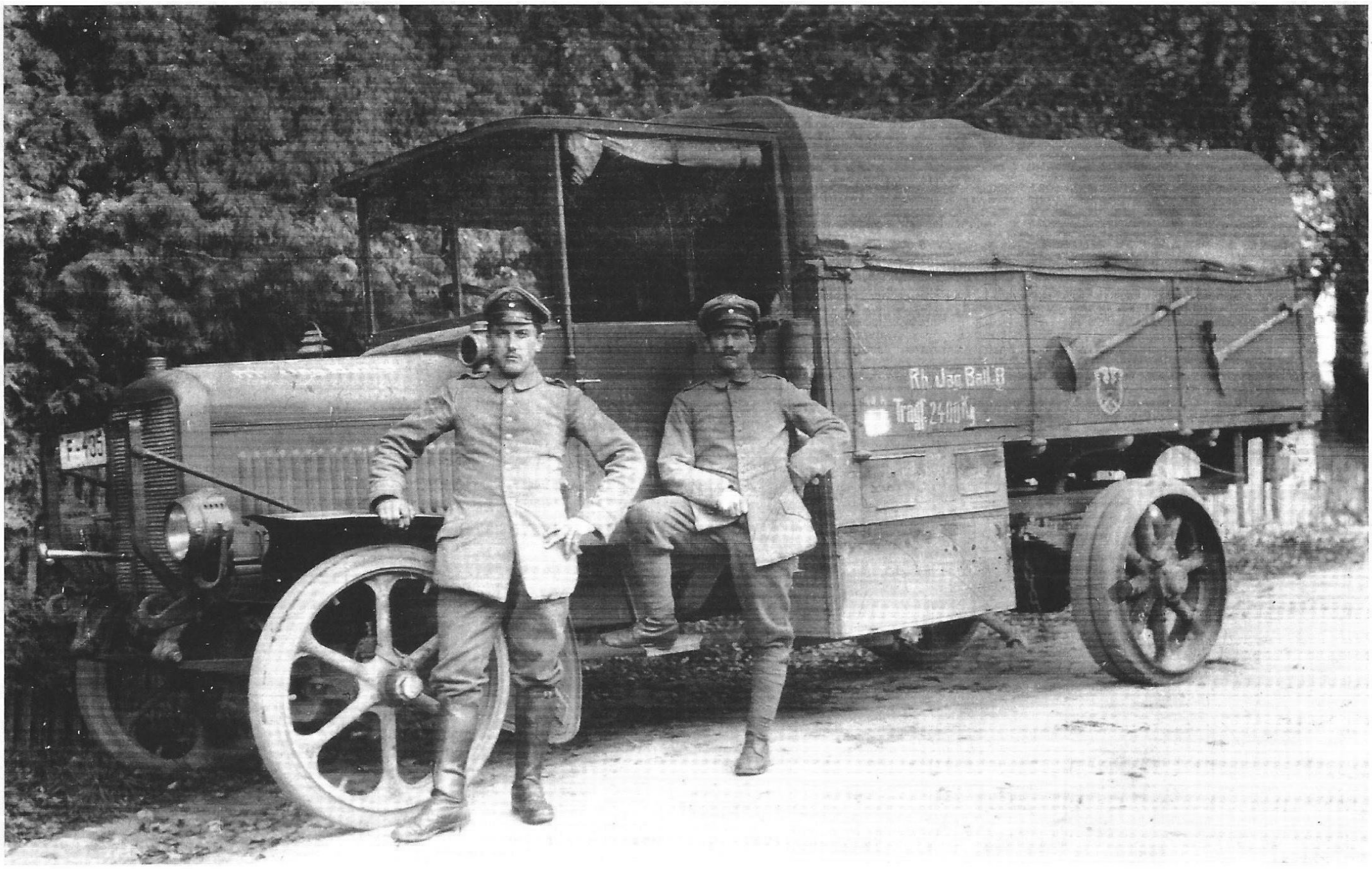
Windscreens and cabs got damaged and often there was no proper replacement on hand. This truck therefore features an improvised windscreen made of windowpanes. Typical of military Adler trucks was the presence of four headlights: one each left and right of the radiator, and one more each to the left and right of the cab. Note also the military radiator brush guard. This truck carries a licence plate of *V Armee* (5th Army), and a horseshoe for better luck inside the cab. The photo is dated March 1916. Credit: Jochen Vollert Collection


CHAUDRONNERIE LORRAINE USINE de LONGUYON
E.K.K. 38
E.K.K. 38



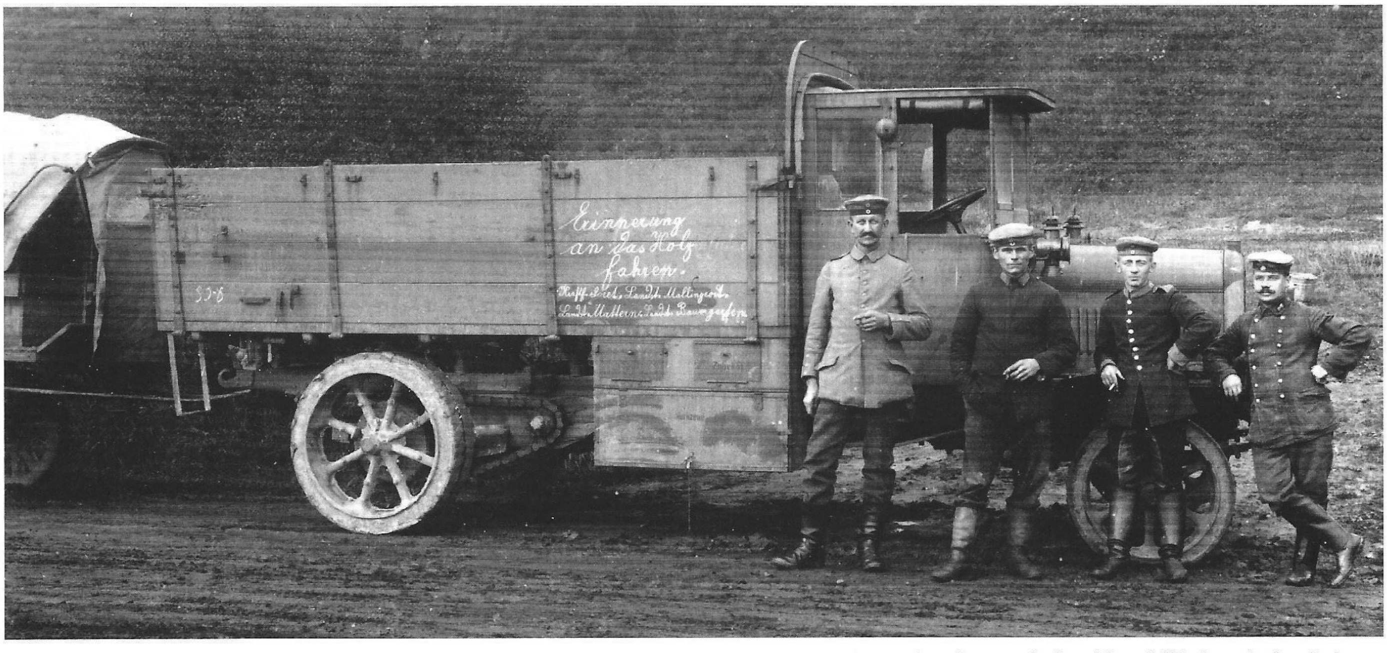
It remains unclear when Adler dropped its logo on the radiator front. The truck in these two photos is a pre-war civilian Adler 3.5-ton 1912. The presence of a foldable soft-top for the cab also underlines the commercial background of this impressed vehicle refitted with a radiator brush guard. The lettering on the cargo bay side panels gives a *Ladegewicht* (suggested regular load) of 3 tonnes, yet a *Tragfähigkeit* (maximum permissible load) of 4 tonnes. This duality was common practice to aid drivers, yet it makes proper identification almost impossible. This Adler of *Etappen-Kraftwagen-Kolonne 38* of the 5th (*V*) Army is *Wagen* number 11, and it is here engaged in hauling German artillery pieces from a railroad depot towards units on the frontlines.

Credit: Jochen Vollert Collection



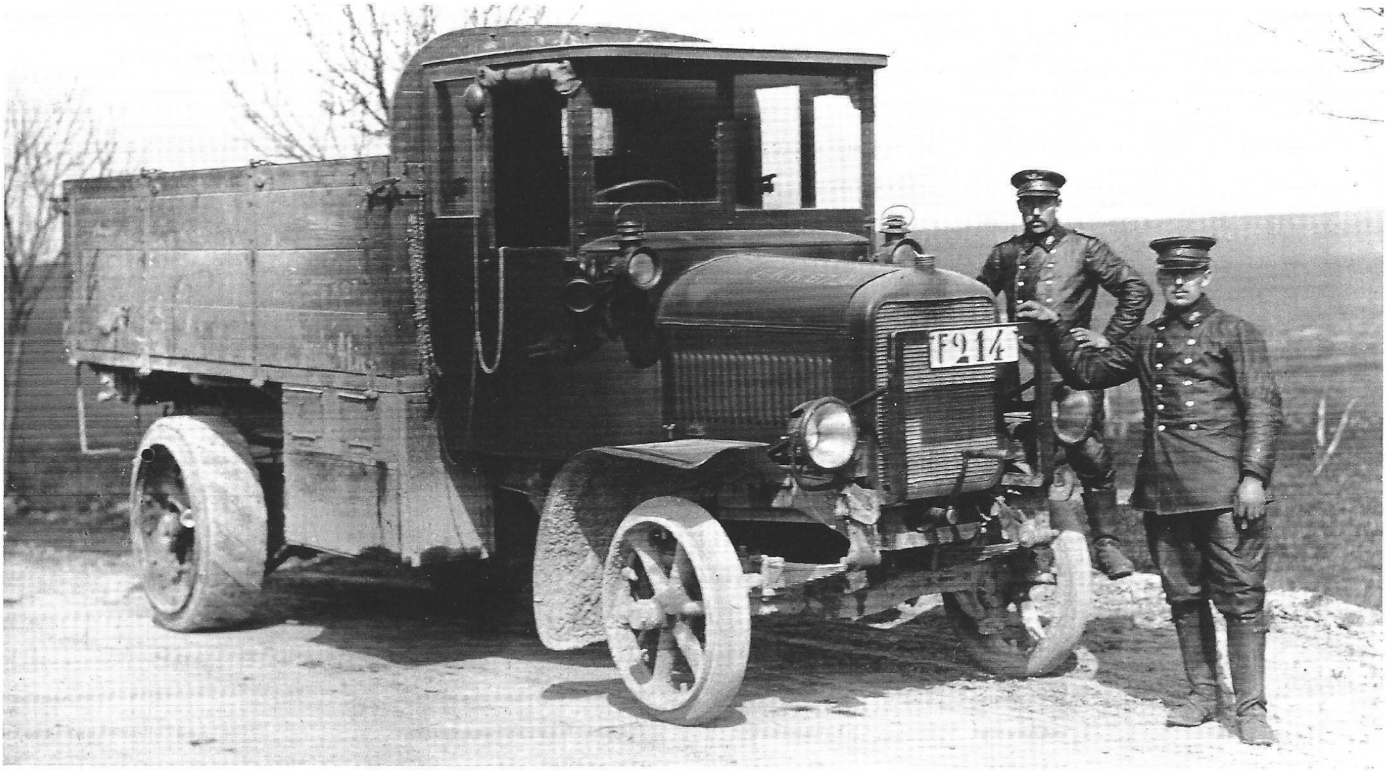
As with so many other truck manufacturers, barely any production figures of the period up till 1918 have survived. After Adler had introduced its 4-ton subsidy truck in 1912, and based on the fact that production of *Armeelastzüge* was halted when war broke out, the manufacturer continued to produce that truck type minus its trailer during the war. Whether the Adler 4-ton truck was ever standardised in full is not on record, but military design requirements were certainly adapted into production. The key features of the Adler 4-ton military truck were the fitting of huge boxes on the left and right sides under the cargo bay just aft of the cab, and a spade and axle on the side panels of the cargo bay. These details can be seen very well in this photo. In addition, most military trucks featured a closed cab with windscreen rather than a folding soft-top. Note the markings of *Rheinisches Jäger Bataillon 8* (8th Rhineland Light Rifle Battalion), the licence plate reading *F-435*, with '*F*' standing for *Armee-Abteilung von Falkenhausen*. Also interesting is the Prussian crest just below the spade, and the fact that the *Tragfähigkeit* (payload rating) of the truck was reduced from 4,000kg to 2,400kg. The cast steel tyres feature the typical rubber-bandage mounting screws in-between the spokes. The photo is dated November 1915.

Credit: Jochen Vollert Collection

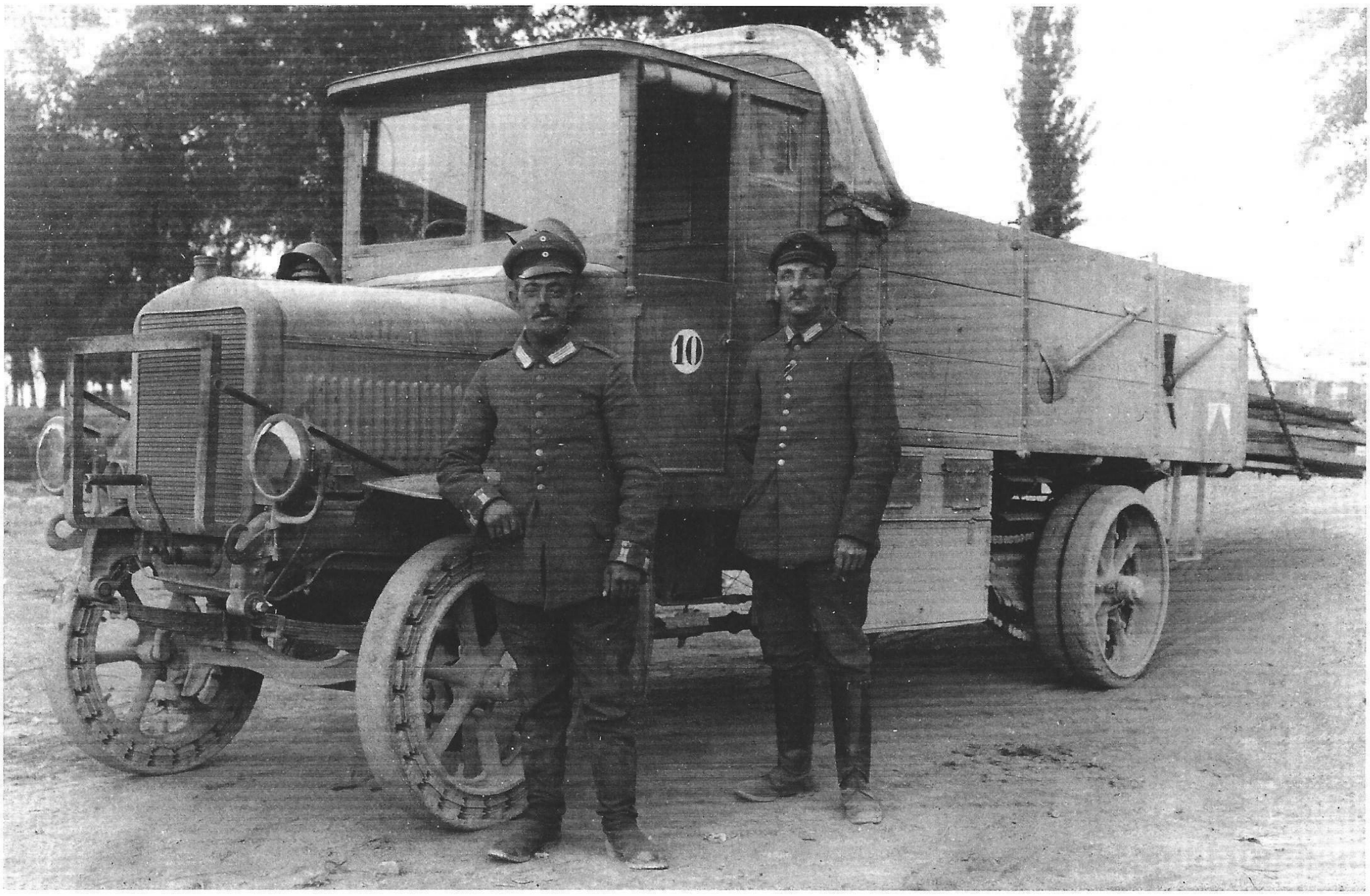


The military-grade toolboxes, here visible on the right side of the truck, held spare parts, tools, sand and snow chains. Also visible here is the chain drive on the rear axle and the design of the wartime cab. The chalk lettering reads "In memory of transporting wood", followed by the names of the drivers and three Landsturm soldiers. This is an *Armeelastzug* towing the early 2-ton trailer with a cab (with soft-top) for the brake operator.

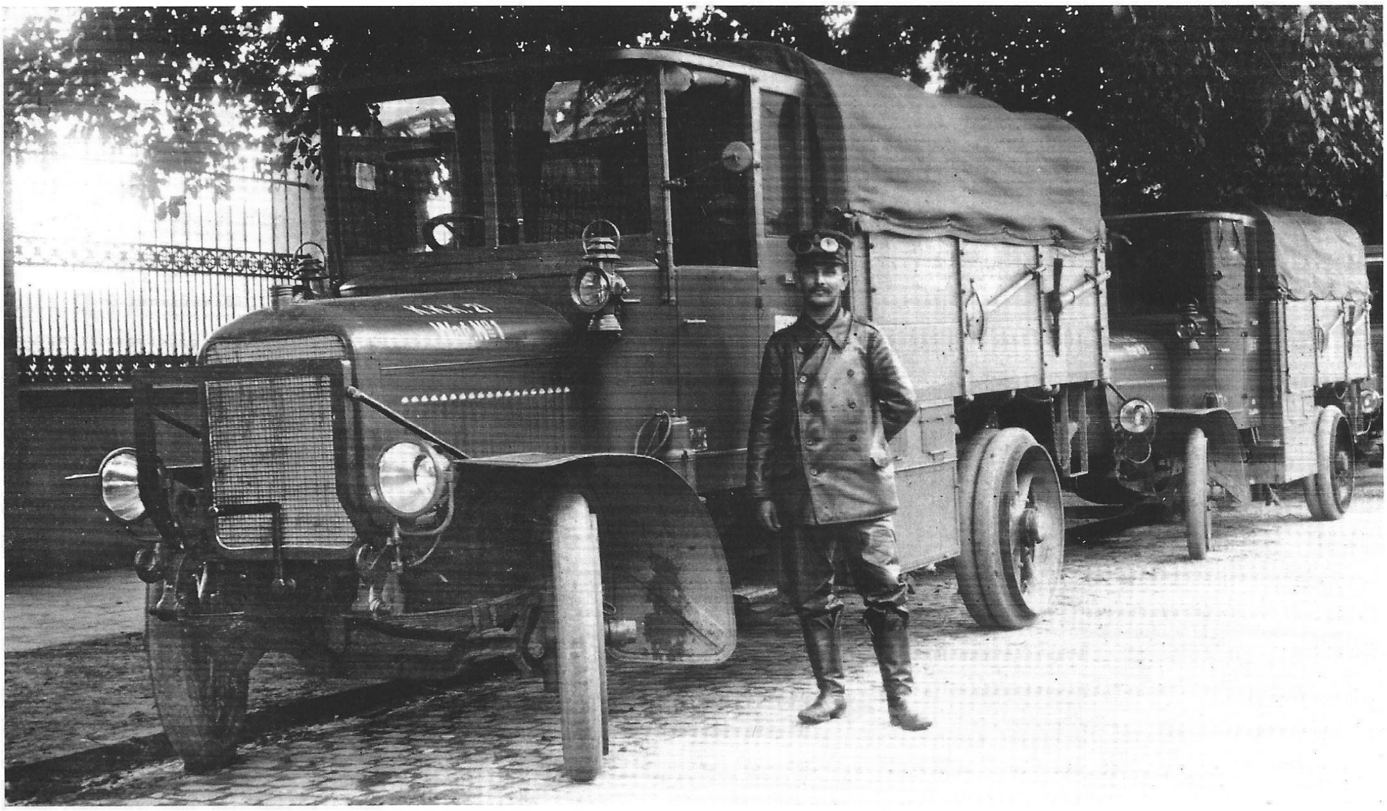
Credit: Jochen Vollert Collection



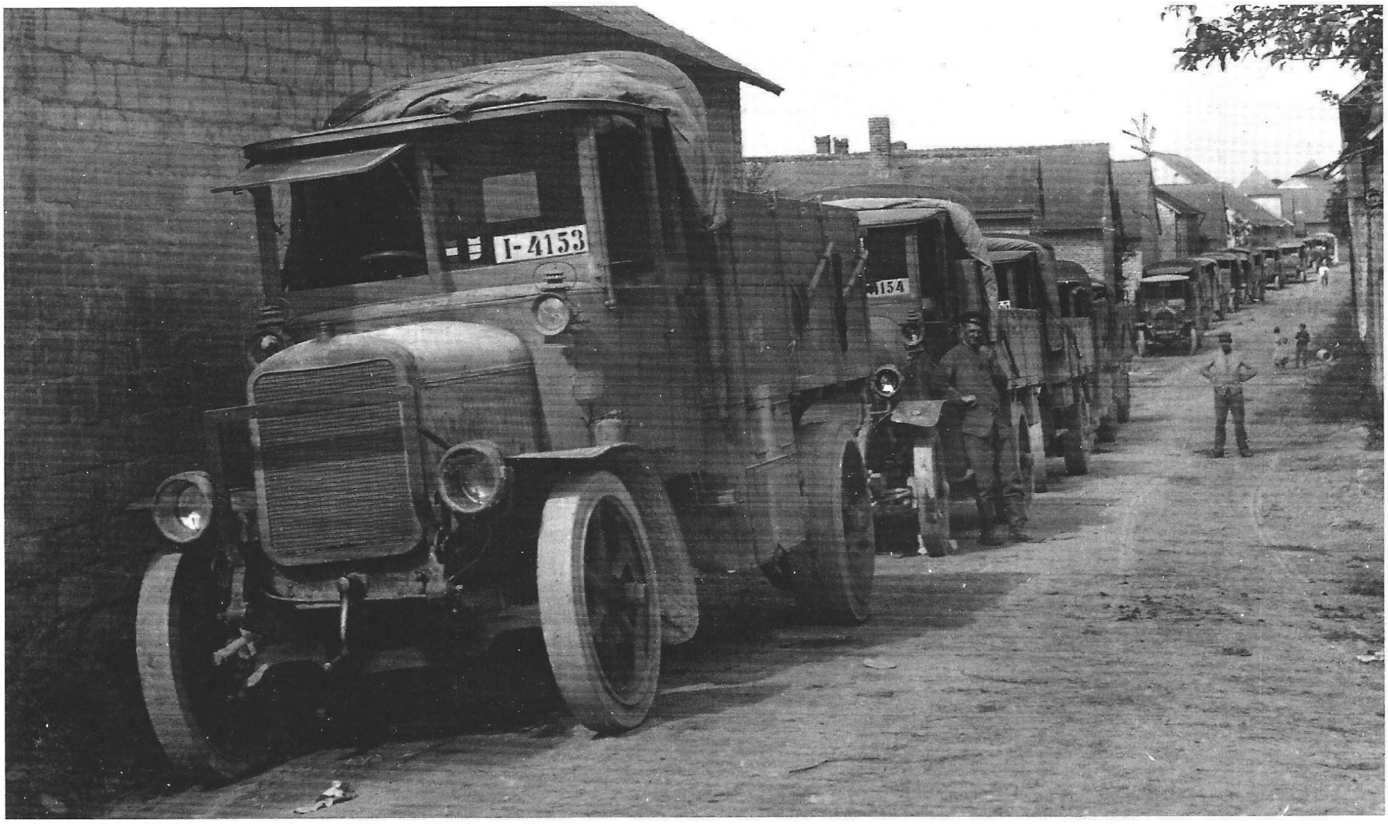
This Adler *4-Tonnen Lastkraftwagen* carries the 'F' licence plate of *Armee-Abteilung von Falkenhausen* and belongs to *Etappen-Kraftwagen-Kolonne 87*. While otherwise pretty standard issue, the double rear wheels are worthy of attention, as they have been fitted with an anti-slip pattern covering both wheels. Both the driver and assistant driver wear the leather *Fahranzug* with the typical double line of bottons. Credit: Jochen Vollert Collection



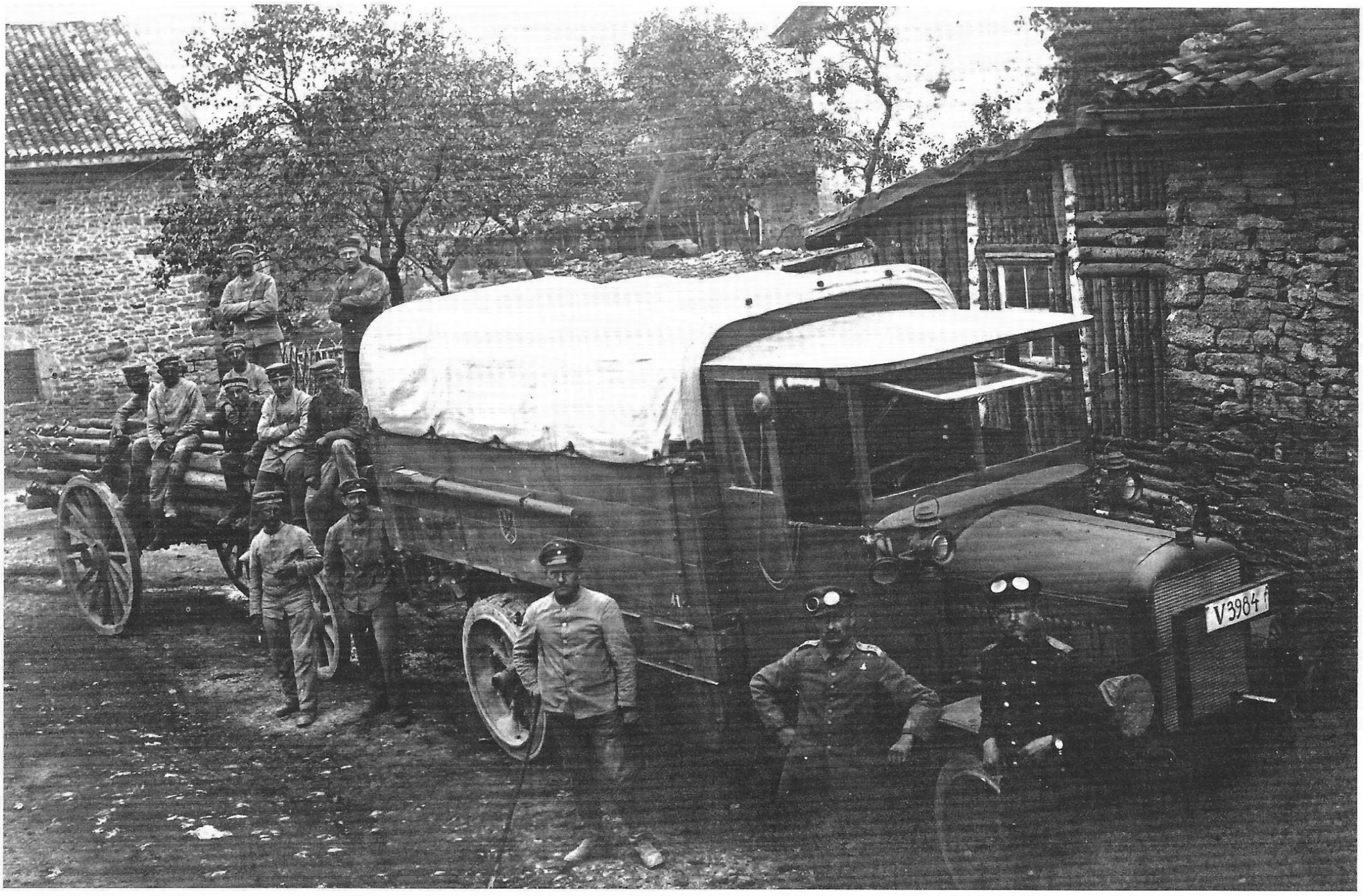
Another example of an Adler *4-Tonnen Lastkraftwagen* in wartime military guise. Note once more the military tools on the sides of the cargo bay and the toolboxes beneath it. This example is once more equipped with *Kriegsbedingter Notbereifung* on the front axle, so the photo was taken towards the end of the war in 1918. Note the absence of any licence plate or other military marking apart from the unidentified '10' on the *Begleitmann* assistant driver's door. The two-part windscreen is standard issue. Credit: Jochen Vollert Collection



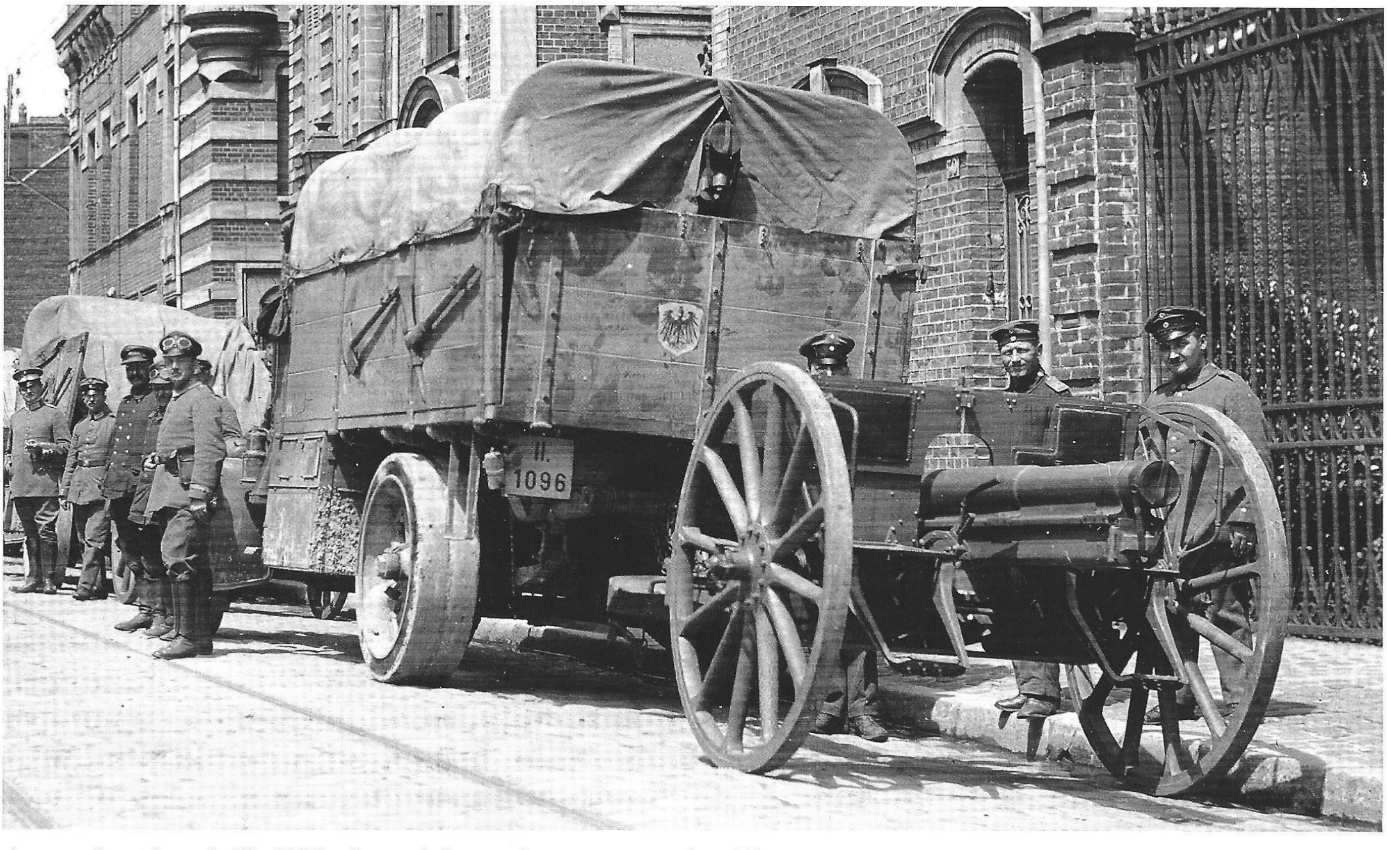
Trucks no. 1 and 2 of the *Korps-Kraftwagen-Kolonne 21* (corps-level truck column) are Adler *4-Tonnen Lastkraftwagen* of wartime production. Note the right-hand steering and the protective tarpaulin on the assistant driver's door on the truck in the background. The driver wears a non-standard leather *Fahranzug* without *Kraftfahrtruppe* insignia on the collar (and even without its pad beneath) and without the typical supportive strip under the left line of buttos. See the chapter on uniforms from page 184 for more details. Credit: Jochen Vollert Collection



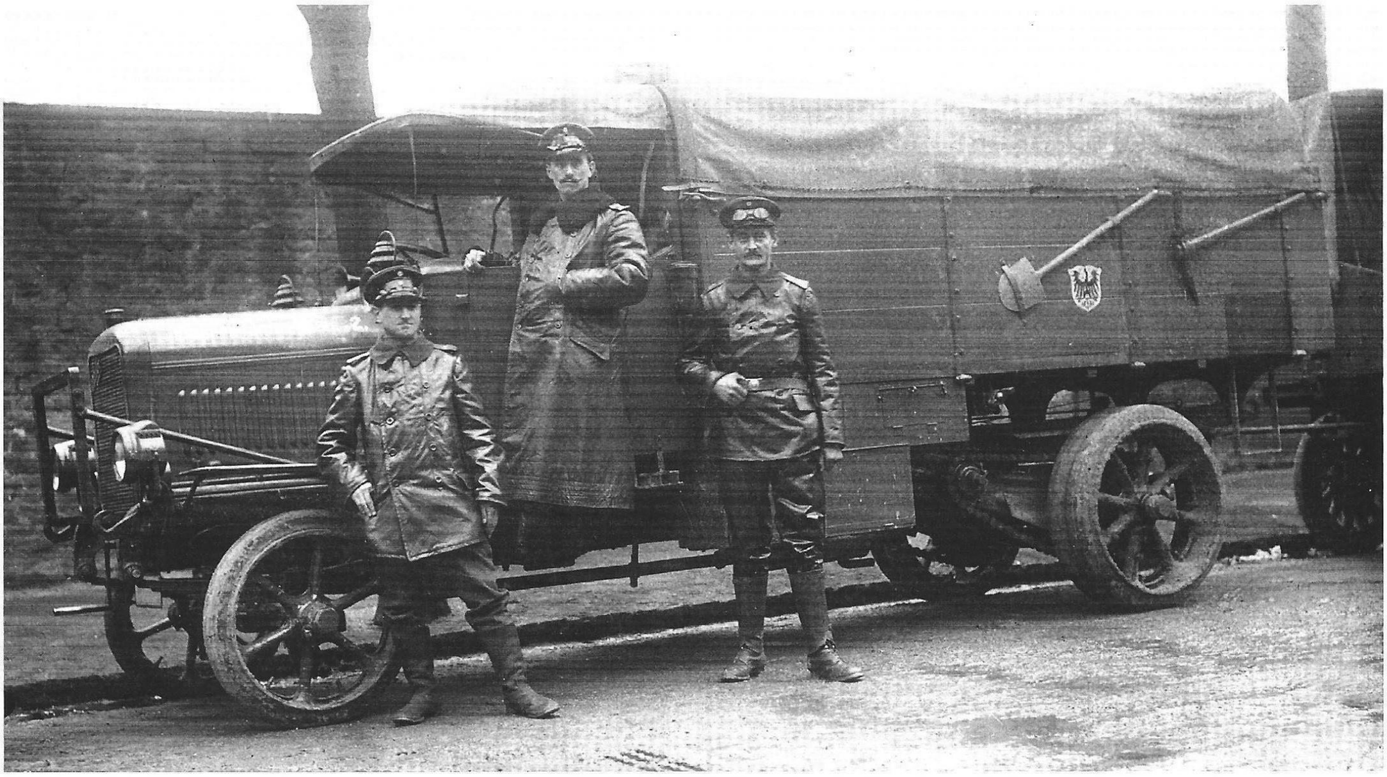
A typical *Kraftwagenkolonne* truck column in 1917, in this case from the 1st Army (licence plate *I-4153)* led by a military Adler 4-ton truck. As was common practice, the tarpaulin cover of the cargo bay is stored on the cab roof. Other trucks of the column are of various types, as was usual. The shortage of military trucks in the German Army prevented homogenous equipping of units more often than not. Interestingly, Adler trucks came with two versions of front wheels: a large one, as in this photo, and a smaller one (see page overleaf top for comparison).
Credit: Jochen Vollert Collection



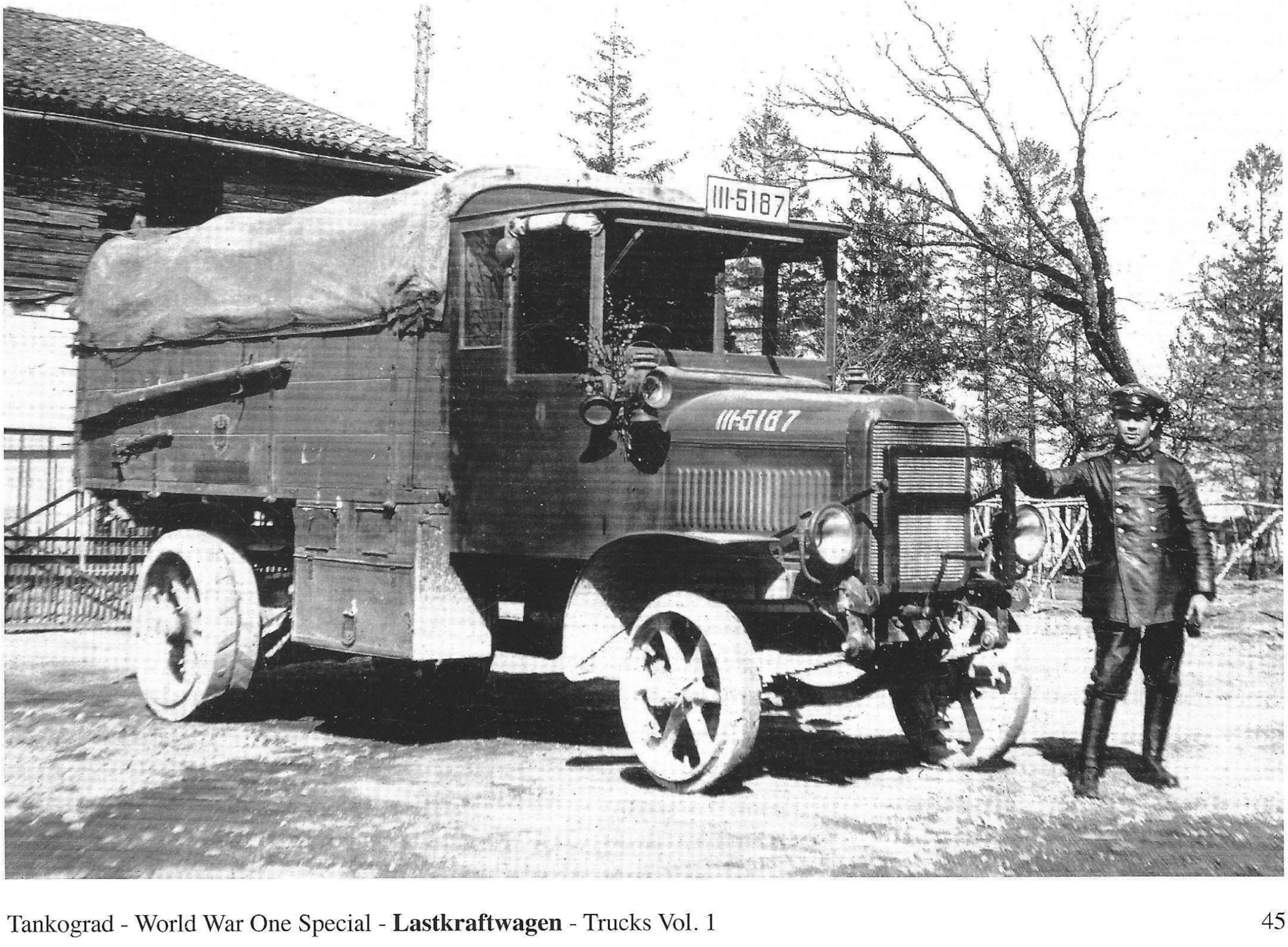
Military equipment on the right side of the cargo bay comprised a spare towbar or pry bar. Note that the cab roof has no hatch. This truck is in service with *V Armee*, as the licence plate indicates. Credit: Jochen Vollert Collection

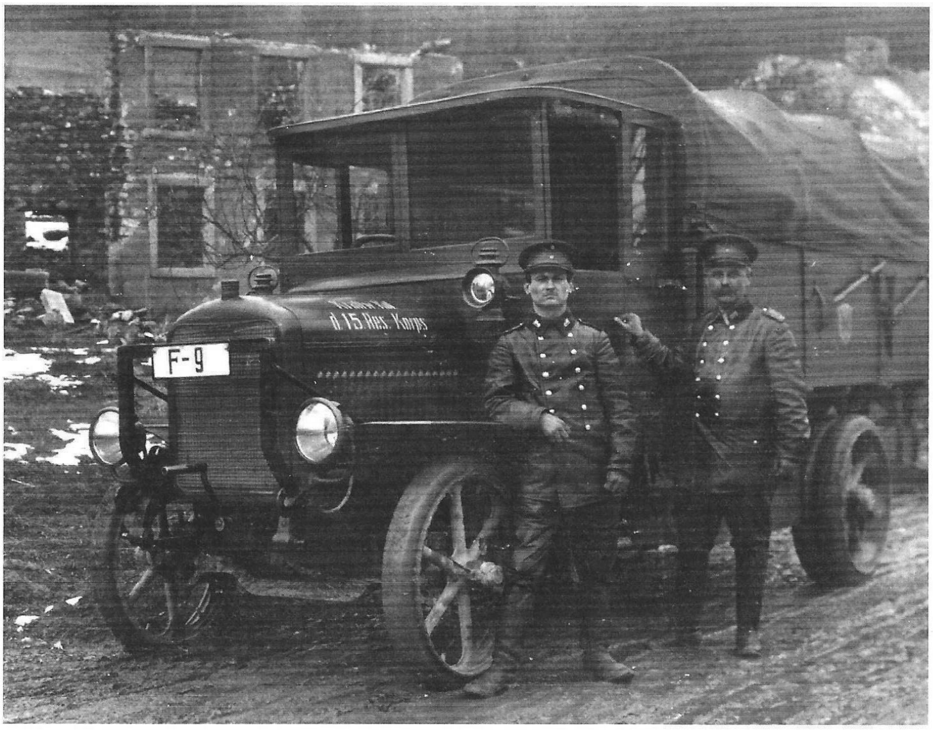


As most photos from the World War One period were taken as a memory for soldiers, rear views of vehicles are extremely scarce. This Adler 4-ton of *II Armee* has been marked with the Prussian crest, and it is being used as an artillery prime mover. Note the block and tackle visible under the tarpaulin atop the tailgate. The rear wheels have absorbed so much mud that they appear baked together. Credit: Jochen Vollert Collection

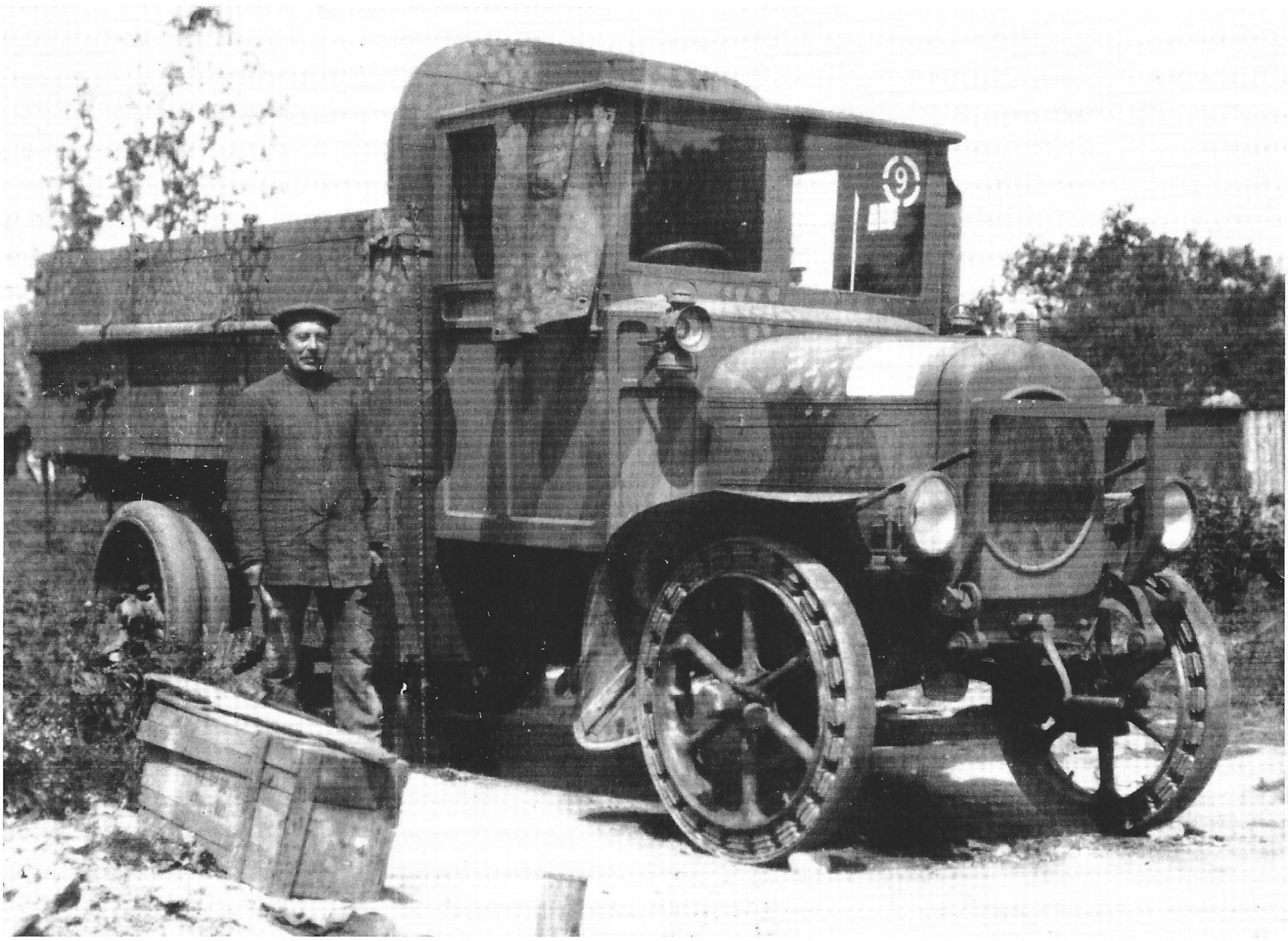


Military trucks in general, and Adler versions were no exception here, were most often equipped with external mounts for pioneer tools, including shovels, pickaxes and pry bars. During the course of the war, it became more and more common to replace the standard rubber-rimmed cast steel rear tyres that featured no tread pattern (see above) with tyres sporting an anti-slip grid pattern (see below). Note on these photos the staggered commercial toolboxes (above, a truck of *2. Etappen-Inspektion*), in direct comparison to the larger military toolboxes of the same width (below, a truck of *III Armee*). Credit: Jochen Vollert Collection





The licence plate showing an 'F' denotes that this Adler truck belongs to *Armee-Abteilung von Falkenhausen* (1914-16). The lettering on the bonnet reads *Kraftwagen-Kolonne des 15. Reserve-Korps* (Motor Vehicle Column of 15th Reserve Corps). Both the driver and assistant driver wear the leather *Fahranzug* with the typical double line of bottons yet no belts. The protective leather uniform consists of a *Ledermütze* (leather visored cap), *Lederlitewka* (leather uniform jacket with two lines of zinc or German silver buttons), *Lederhose* (leather trousers), *Handschuhe* (gloves), *Halsschützer* (neck protection), *Schutzbrille* (protective goggles), *Leibriemen* (belt), and either *Infanteriestiefel* (infantry boots), *Gamaschen* (gaiters) or *Wickelgamaschen* (leg wrappings), the latter in combination with *Schnürstiefel* (lace combat boots). For foul weather and wintertime, an additional overcoat and gloves would be worn. Standard to all *Kraftfahrtruppe* were the "epaulette" shoulder boards with a red '*K*' for '*Kraftfahrtruppe*', and a pewter/zinc insignia in the shape of a motor vehicle on the dark blue *Kragenplatte* (cloth collar). Credit: Jochen Vollert Collection

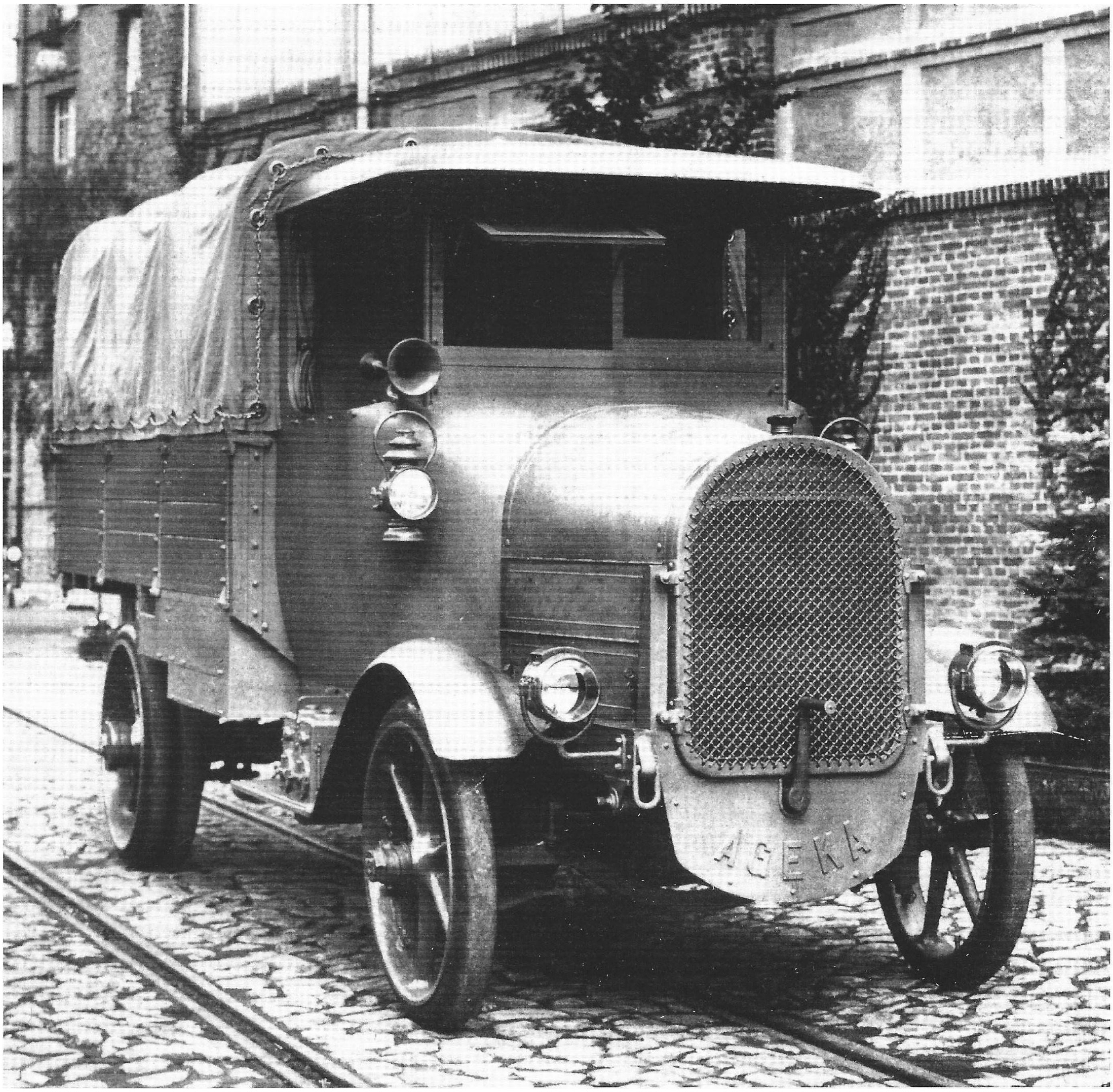


Late in the war Adler introduced a new type of militarised truck that featured a heavily revised radiator design. In fact, this new radiator was so radically different to any of Adler's previous designs that this truck could hitherto not be identified. A recently surfaced American report evaluating captured German trucks in 1919 in Coblenz now allows to categorise this vehicle in the Adler range of trucks. The photo was taken in 1918, as is underlined by the *Kriegsbedingte Notbereifung* emergency wartime tyres on the front axle and that were introduced that year. Also in 1918, the so-called *Buntfarbenanstrich* multi-tone camouflage was introduced for vehicles such as prime movers, armoured cars and tanks. It was so rare on trucks that this is one of only two available photographic proofs that it was applied on that range of vehicles as well. Credit: Jochen Vollert Collection

03.2 Ageka / Ageka Trucks

Certainly one of the most enigmatic of all Imperial German truck makers is Ageka. In 1895, Ernst Amme and his colleagues Carl Giesecke and Julius Konegen founded the company Amme, Giesecke & Konegen (AGK) in Braunschweig (Brunswick). The company built various types of heavy machinery such as roller mills.

In 1915, AGK started a venture to participate in government contracts to build trucks for the military. The automotive product was given the name Ageka (the phonetic pronunciation of the abbreviation AGK). No further details about this truck have survived, yet with certainty the outlines of *Heeresmodell* standardisation were observed: 3-ton payload range, double rear wheels, chain drive, 35-50hp engine, closed cab with roof and windscreen, rubber-rimmed spoked wheels, and a cargo bay with tarpaulin cover and struts. No production figures are on file.



The 3-ton Ageka *Heeresmodell Regel-Dreitonner* truck was based on existing truck designs of the period. One outstanding feature of the type is the massive front-mounted protection plate with the lettering 'AGEKA', and a mesh-wire protector in front of the radiator housing.
Credit: Jochen Vollert Collection

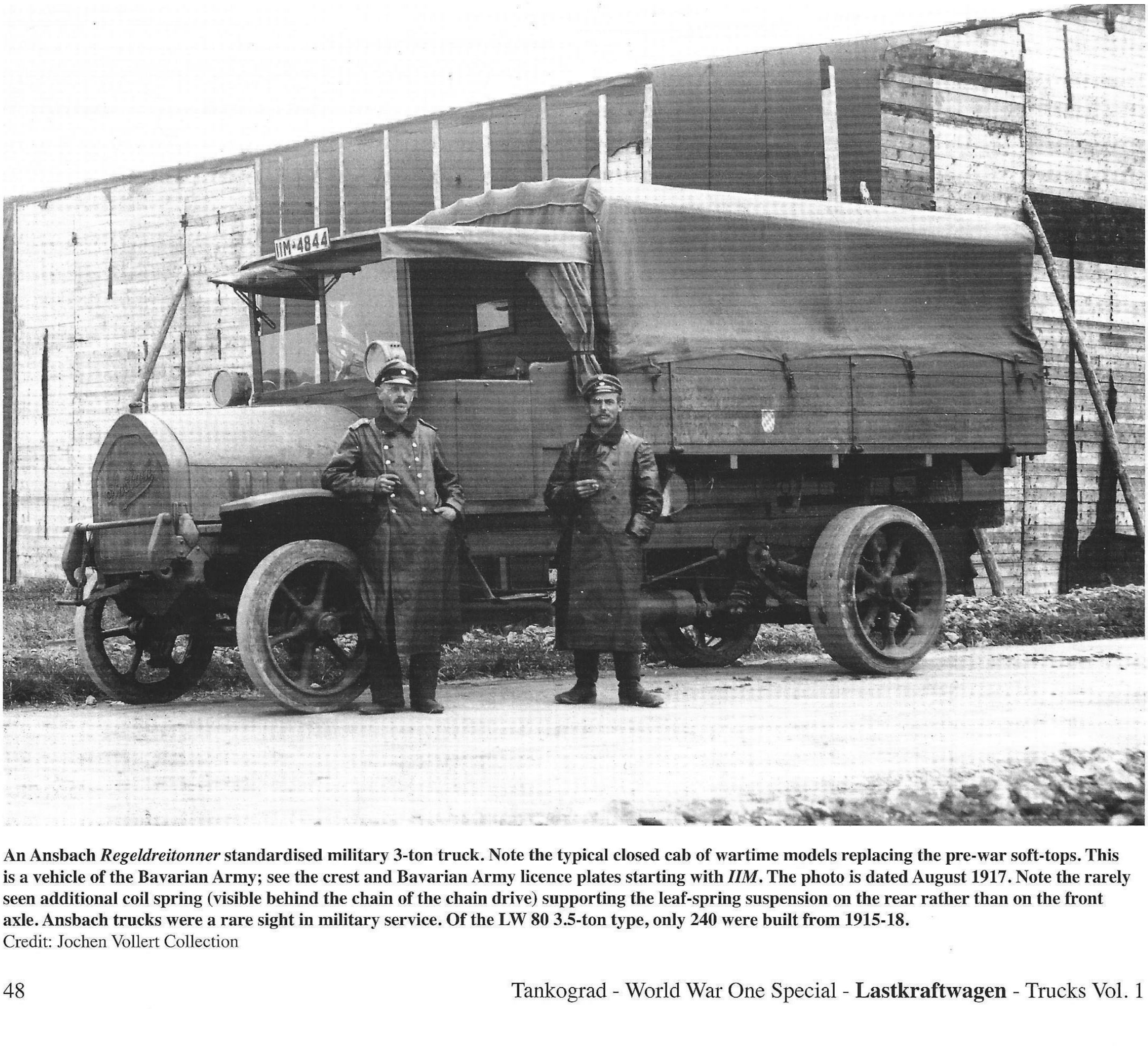
03.3 Ansbach / Ansbach Trucks

Founded in 1906, Fahrzeugfabrik Ansbach GmbH (from 1916-19 Fahrzeugfabrik Ansbach AG) built light passenger cars, light trucks and buses in the city of Ansbach. In 1917, Ansbach amalgamated with Nürnberger Feuerlöschgeräte-, Automobillastwagen- und Fahrzeugfabrik Karl Schmidt to become Fahrzeugfabriken Ansbach-Nürnberg AG, which in 1920 became the company FAUN.

Ansbach was among the earliest suppliers of vehicles for military use, starting in 1906 with a 1.75-ton 18hp truck and a 24hp bus. In 1910-11 the company built the *Leichter Armeelastzug, subventioniert, Typ A.L.Z.* 5-ton subsidy truck-trailer combinations for army trials. The climax of commercial vehicle production was reached in 1911-12 when the range included, among others, the

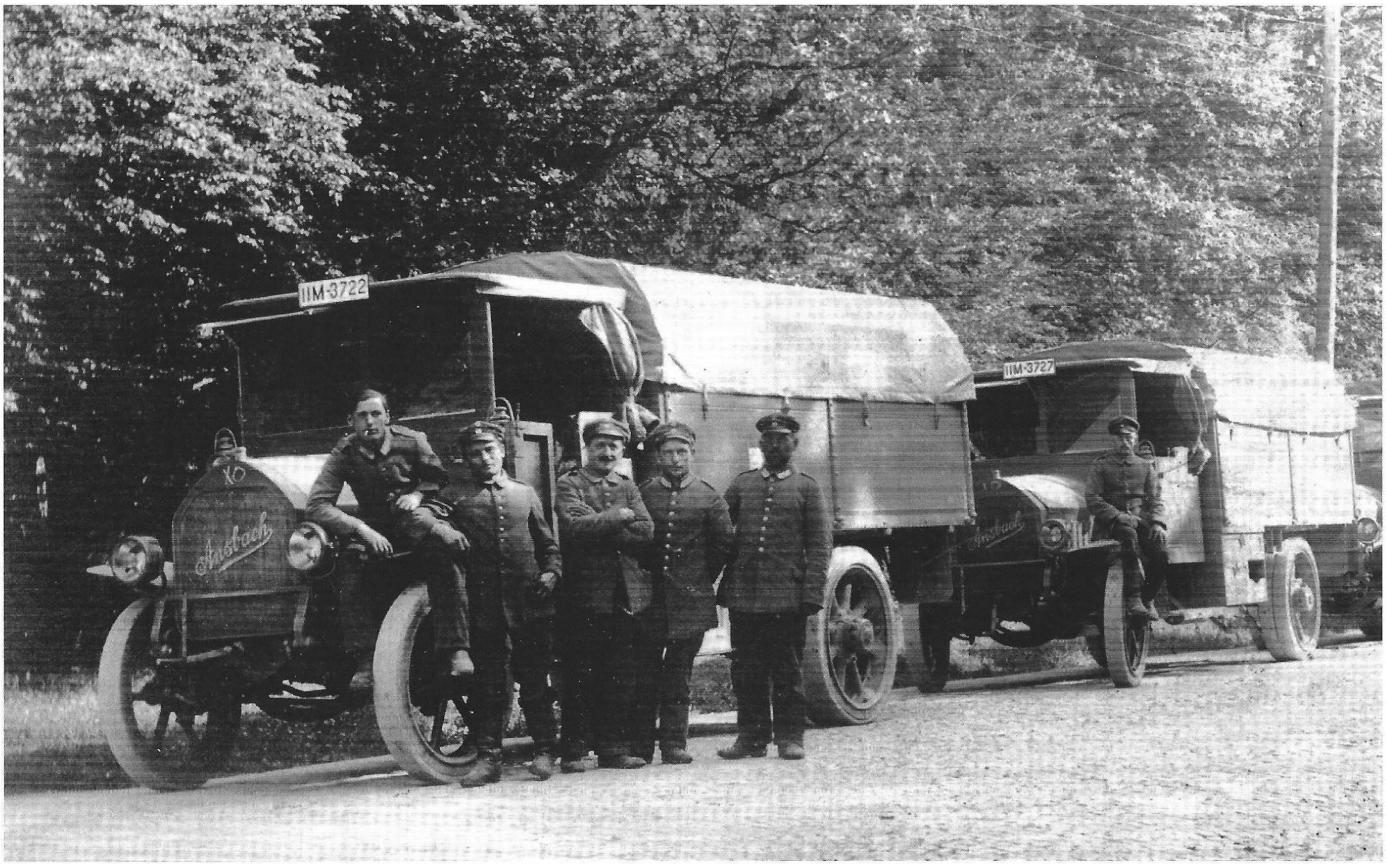
°	LW 40	2-ton	powered by a 4-cylinder 16hp 2608cc engine
°	LW 50	2.5-ton	powered by a 4-cylinder 28hp 4710cc engine
°	LW 60	3-ton	powered by a 4-cylinder 28hp 4710cc engine
°	LW 70	3.5-ton	powered by a 4-cylinder 32hp 4710cc engine
°	LW 80	3.5-ton	powered by a 4-cylinder 32hp 4710cc engine
°	6t ALZ (*Armeelastzug*)	4.5-ton	powered by a 4-cylinder 60hp 7850cc engine

During World War One, Ansbach mostly built 3-ton trucks for the German Army. Unfortunately, Ansbach truck manufacturing is very weakly documented, and insufficient photographs do not allow differentiation of wartime trucks from each other.

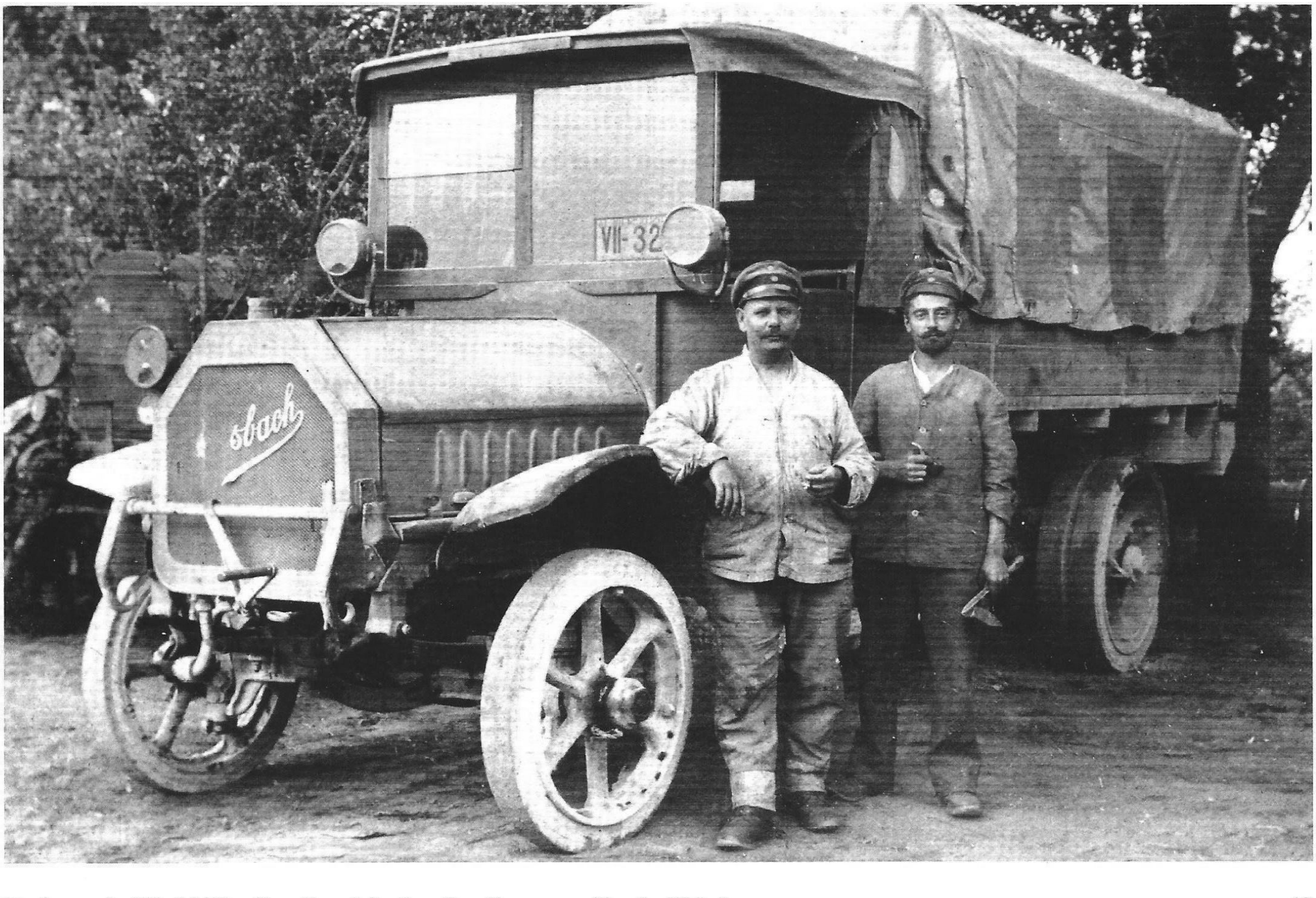


An Ansbach *Regeldreitonner* standardised military 3-ton truck. Note the typical closed cab of wartime models replacing the pre-war soft-tops. This is a vehicle of the Bavarian Army; see the crest and Bavarian Army licence plates starting with *IIM*. The photo is dated August 1917. Note the rarely seen additional coil spring (visible behind the chain of the chain drive) supporting the leaf-spring suspension on the rear rather than on the front axle. Ansbach trucks were a rare sight in military service. Of the LW 80 3.5-ton type, only 240 were built from 1915-18.

Credit: Jochen Vollert Collection



Two more photos of Ansbach trucks, most probably LW 80 3.5-ton versions. Note the smaller details such as different shapes of radiator casings and different types of cargo bays used. The photo above shows once more an Ansbach in Bavarian Army service while the one in the photo below sports a licence plate of the 7th Army. The right half of the windscreen features an openable upper section to improve ventilation. The trucks are fitted with military-grade six-spoke metal front wheels and eight-spoke double metal rear wheels. Credit: Jochen Vollert Collection

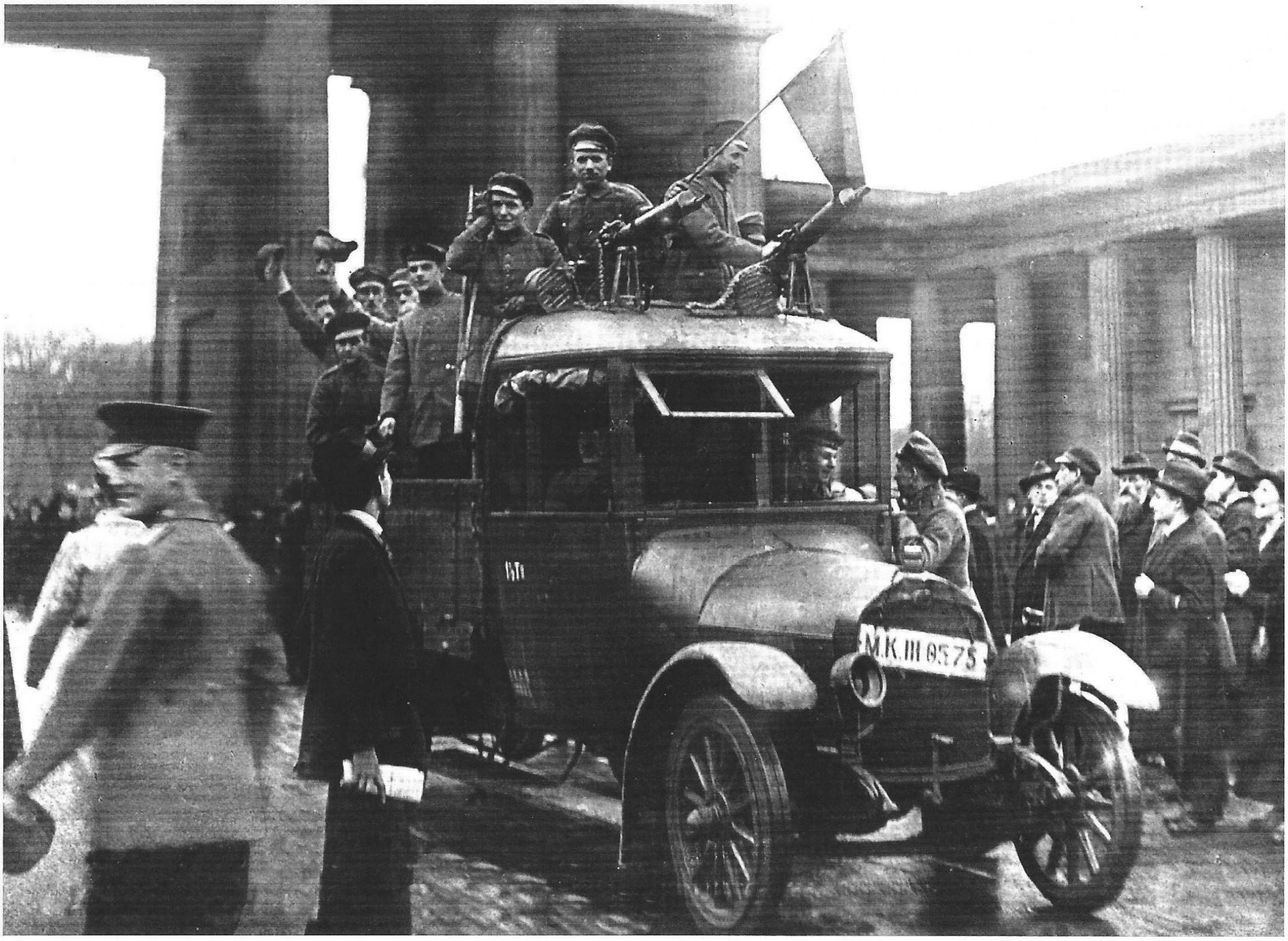


03.4 Audi / Audi Trucks

When August Horch left the company carrying his name after an internal dispute, he started a new company called Audi-Werke in Zwickau in 1909, and he continued to build passenger cars. While Audi today is renowned for its passenger and sports cars, it also built trucks from 1912-28. The types produced from 1912 included:

°	Ct	1-ton	powered by a 4-cylinder 35hp 3560cc engine	(one protoype in 1912, 245 built from 1916-18)
°	Bt	1-ton	powered by a 4-cylinder 28hp 2612cc engine	(8 built from 1913-14)
°	Fb	1.5-ton	powered by a 4-cylinder 28hp 2612cc engine	(6 built from 1913-14)
°	Fc	1.5-ton	powered by a 4-cylinder 36hp 3560cc engine	(221 built from 1913-16)
°	Hc	2-ton	powered by a 4-cylinder 36hp 3560cc engine	(82 built from 1916-18)

Based on the limited production figures, Audi trucks remained a rare sight in photos taken in World War One.



The number of Audi trucks delivered to the army is not on file, and certainly it was rather limited. This photo shows a 1.5-ton Fc during the revolutionary days in Germany in 1918-19. Note the '1½ t' marking on the driver's side of the cab. It still carries its *Militär-Kraftwagen 'MK III'* licence plate that denotes that this vehicle was used in the *Reichsgebiet*, military district of Berlin, rather than in the occupied territories. The location in the photo is Berlin; note the Brandenburg Gate in the background. Credit: Jochen Vollert Collection

03.5 Benz / Benz Trucks

The year 1885 will stand forever in automotive history, for that was when Carl Benz built the world's first passenger car, the "*Patent-Motorwagen*". The company responsible for this event was Carl Benz's own, Carl Benz u. Cie. Rheinische Gasmotoren-Fabrik OHG in Mannheim, which had been founded earlier that year. The company's first commercial vehicle was a bus in 1895 that featured eight seats and was powered by a 5hp 1-cylinder engine. The first ventures into trucks were from 1900, when a 1.25-ton truck, a 2.5-ton truck and a 5-ton truck with 6hp 1-cylinder, 10hp 1-cylinder and 14hp 2-cylinder engines respectively were released under the label Benz-Werke (formerly Süddeutsche Automobilfabrik Gaggenau, or S.A.G.). The period 1902-10 was dominated by passenger car production, and no new truck designs were offered. In 1911 the previous Benz S.A.G. commercial designs were offered again to the civilian market, now under the Benz Gaggenau (from hereon in Benz) label, and including trucks ranging from 1.5-ton to 5-ton versions with 20hp to 50hp 4-cylinder engines that were built up till 1913.

In 1913-14 new Benz designs appeared on the scene, the

°	KL 14	2- to 3-ton	powered by a 4-cylinder 35hp 4710cc engine
°	KL 14	2- to 3-ton	powered by a 4-cylinder 45hp 6450cc engine
°	KL 14	2- to 3-ton	powered by a 4-cylinder 50hp 7360cc engine
°	BK 13	3- to 4-ton	powered by a 4-cylinder 45hp 6450cc engine
°	BK 13	3- to 4-ton	powered by a 4-cylinder 50hp 7360cc engine
°	ML 13	4- to 5-ton	powered by a 4-cylinder 50hp 7360cc engine

All three new designs, the KL 14 (built 1914-18), BK 13 (built 1913-16) and ML 13 (built 1913-16), were also available as *Militärausführung* military types and, after the war had broken out, so-called *Kriegstypen* war types.

From 1916, the production of military type trucks was launched:

°	3 K 2	3-ton	powered by a 4-cylinder 45hp 6450cc engine
°	3 K 2	3-ton	powered by a 4-cylinder 50hp 7360cc engine
°	5 K / 5 K 2	4- to 5-ton	powered by a 4-cylinder 45hp 6450cc engine
°	5 K / 5 K 2	4- to 5-ton	powered by a 4-cylinder 50hp 7360cc engine
°	5 K / 5 K 2	4- to 5-ton	powered by a 4-cylinder 58hp 8590cc engine

'3' and '5' stand for 3-ton and 5-ton respectively, '*K*' stands for *Kette* (chain drive) and '2' stands for *Anhängerbetrieb* (prepared for towing a trailer).

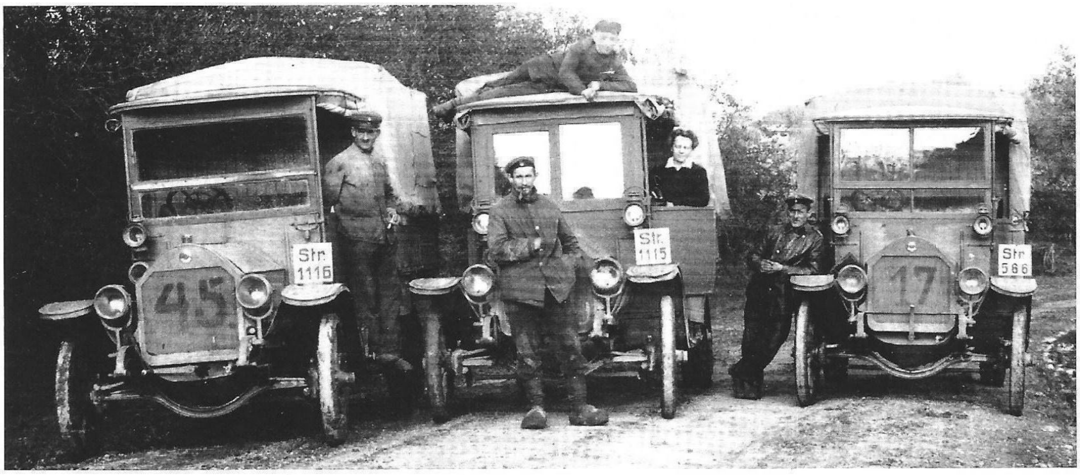
In 1918 a third militarised truck type appeared, the

°	ET 3	3-ton	powered by a 4-cylinder 45hp 6450cc engine
°	ET 3	3-ton	powered by a 4-cylinder 50hp 7360cc engine

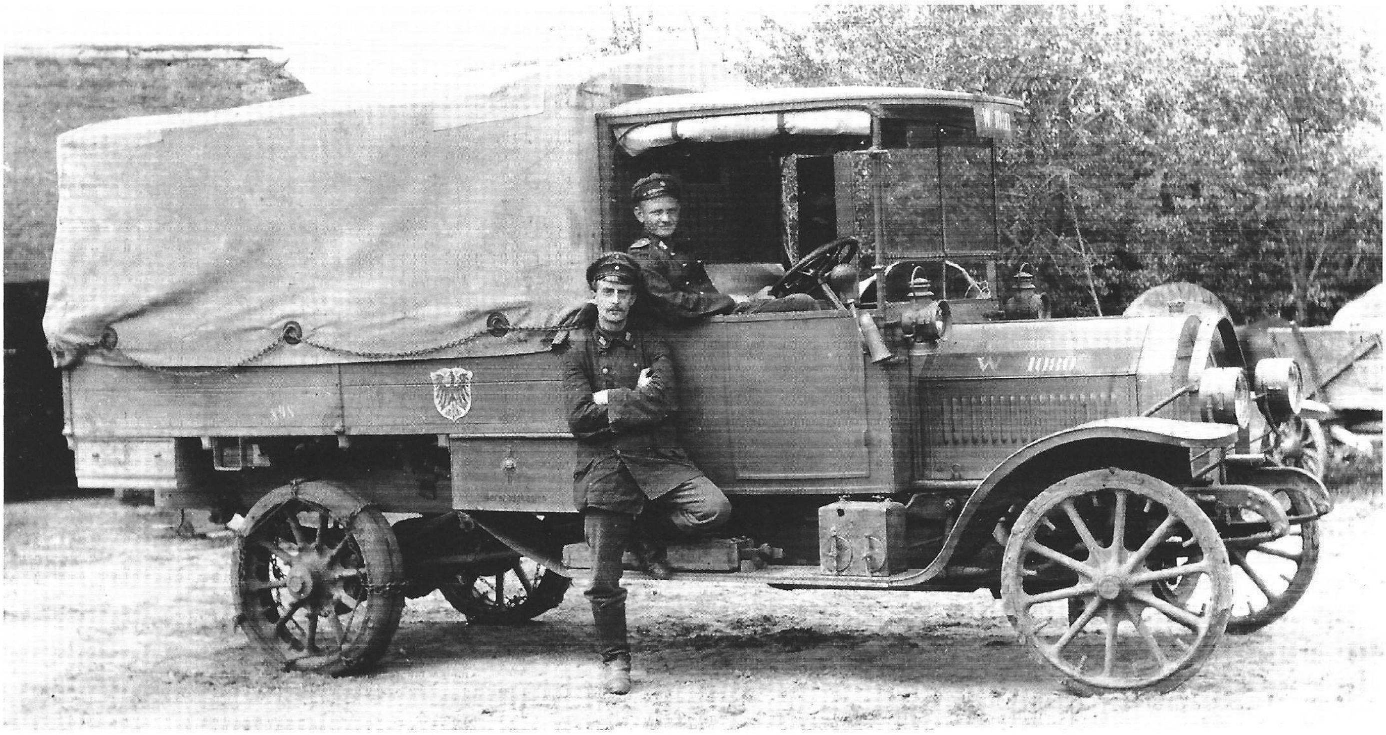
which had a Cardan drive instead of the previously used chain drives.

It is a true piece of luck that with Benz, as opposed to other truck makers, the production figures (trucks and buses) for each year have survived the times: 1911 (441), 1912 (571), 1913 (654), 1914 (1,214), 1915 (1,132), 1916 (1,162), 1917 (1,354) and 1918 (1,285). It can be assumed that the bulk of production from 1915-18 went to the German armed forces. The number of impressed pre-war civilian types is not on file, yet the total number of Benz trucks and buses in Imperial Army service in 1914-18 can be estimated at around 5,000.

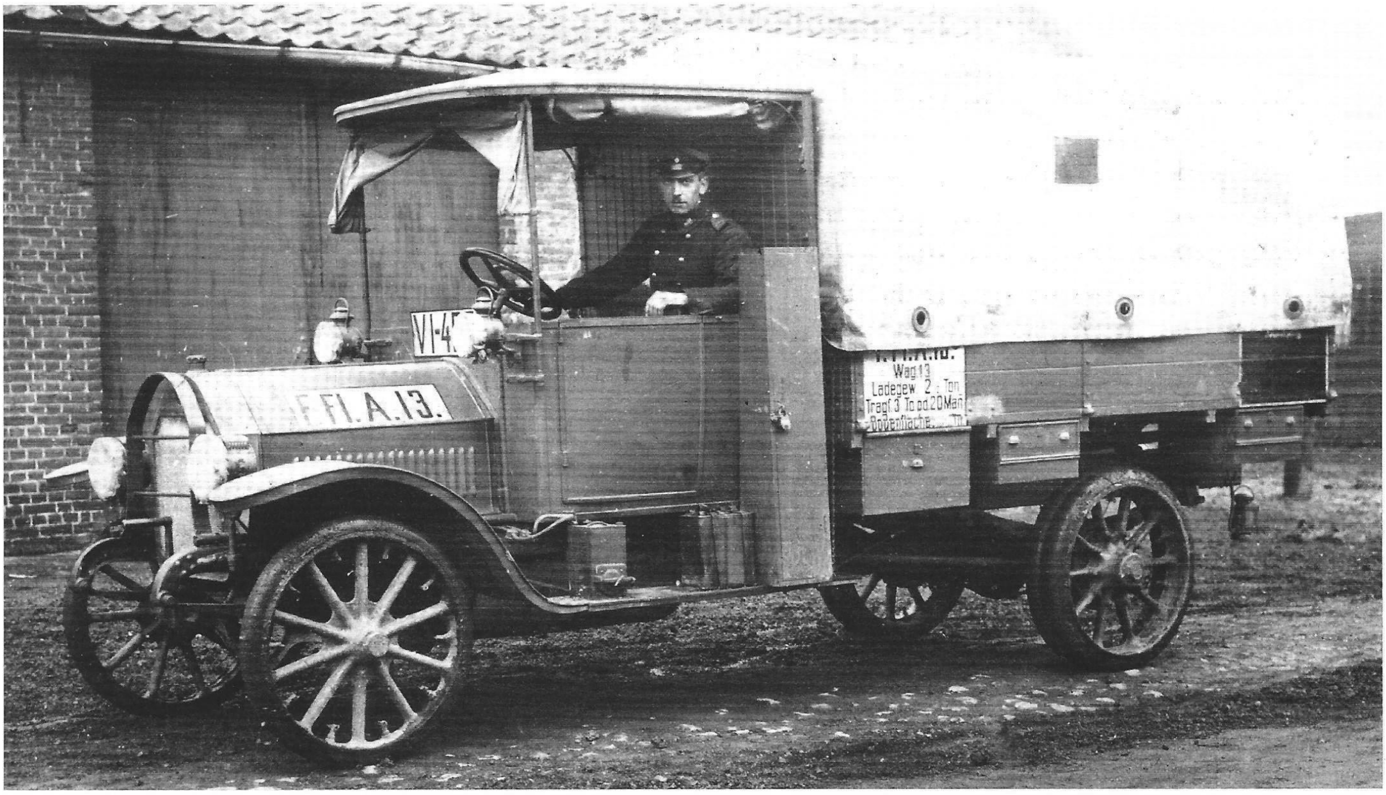
In 1926, Benz u. Cie amalgamated with Daimler-Motoren-Gesellschaft to become Daimler-Benz AG.



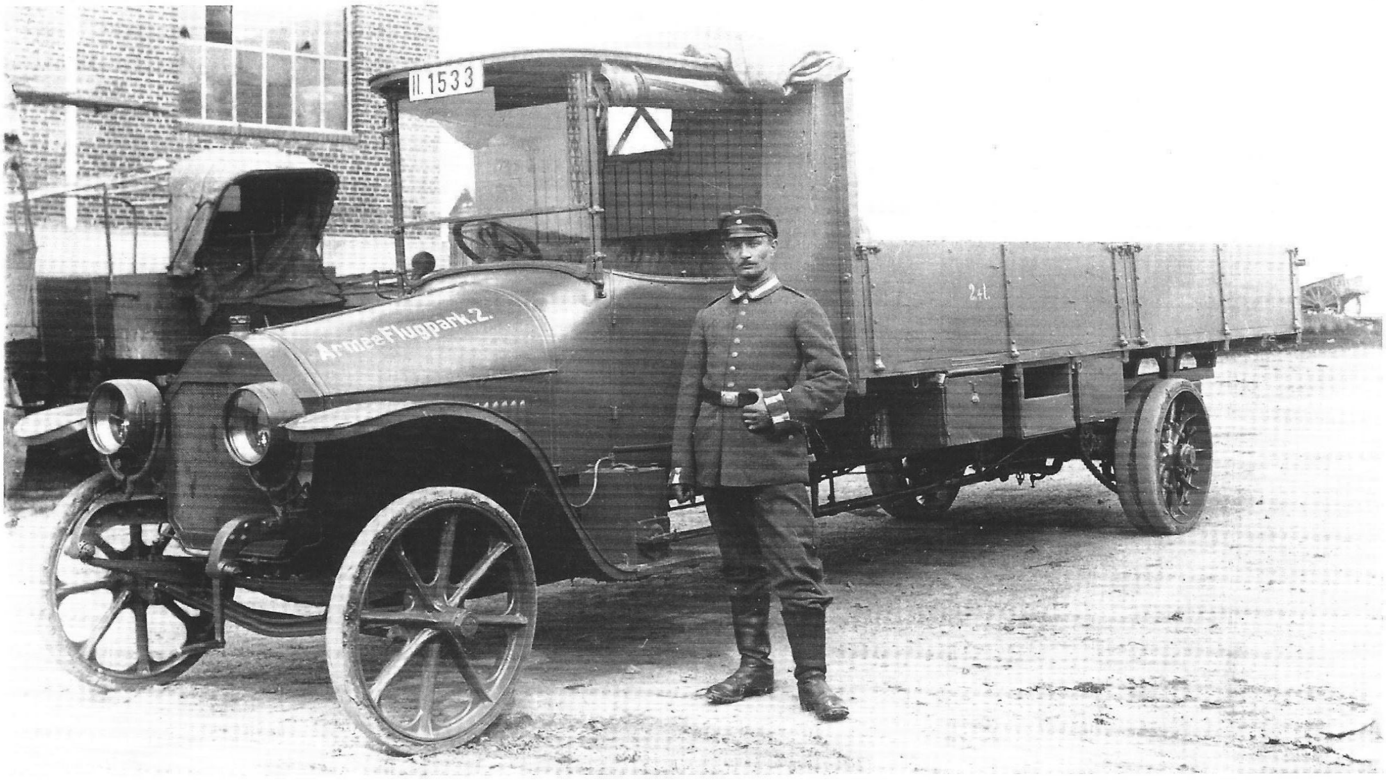
The difficulties in identifying different models of the same truck manufacturer become clear with this photo. All three vehicles are Benz trucks of potentially different models and payload ranges. All look alike apart from the windscreen designs. The absent radiator brush guards identify them as pre-war commercial vehicles now in service with *Armee-Abteilung Strantz* (note the '*Str.*' licence plates).
Credit: Jochen Vollert Collection



From 1911, Benz Gaggenau (or Benz for short) built a number of commercial *Lieferungswagen* (light delivery trucks) in the payload ranges 0.5 ton to 1.5 ton, and with a variety of engine options that featured Cardan drive rather than chain drive on the rear axle. The types included the D 11 (0.5-0.75 ton, 1911-13), the KL 11 (0.75-1.5 ton, 1911-13), a 0.5-ton version (1913-14), an 0.75-ton version (1913-16), a 1-ton (1913-14) and the EK 1 (1.5 ton, 1914-16). Apart from the absent chain drive, these light trucks often feature a cargo bay with only two side-panel sections and non-military wooden ten-spoke wheels. Earlier models featured flat bonnets, while later ones had tilted bonnets. The pictured light truck is one of these *Lieferungswagen* light trucks, in Prussian Army service and with snow chains on the civilian rear wheels to improve traction on slippery roads. With the payload unknown, the type remains unidentified. The '*W*' marking denotes *Armee-Abteilung Woyrsch* of 1914-17. Credit: Jochen Vollert Collection

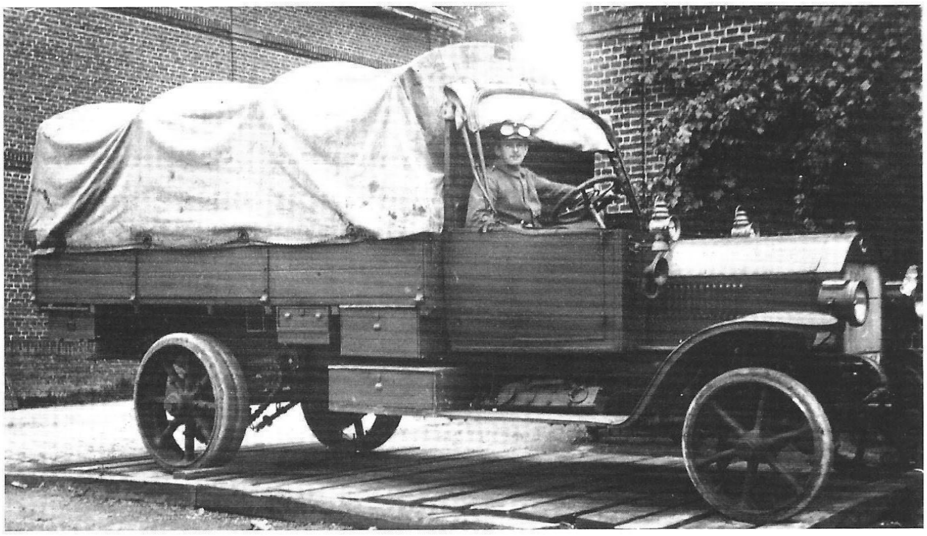


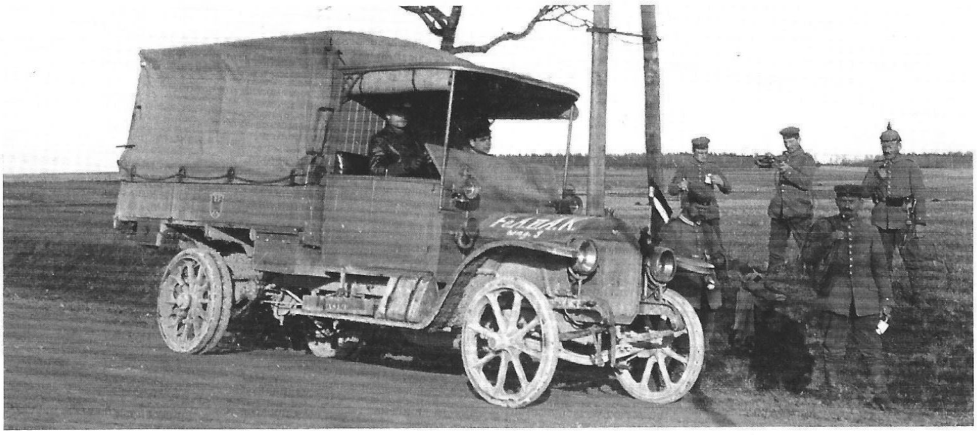
It is established that from 1911-16 Benz-built trucks with a Cardan drive, yet only in the 0.5-ton to 1.5-ton range. The vehicle in the photo above clearly is a Benz, and it clearly has a Cardan drive, yet it has a marking giving a *Ladegewicht* (suggested load) of 2 tonnes and a *Tragfähigkeit* (maximum load) of 3 tonnes. In any documents on Benz heavy trucks with the Cardan drive absent, the educated guess is here a mislabelled data box. Note the civilian spoked wheels, the short two-section cargo bay and the rifle box. Dated March 1916, this truck belongs to the *Feld-Flieger-Abteilung 13* air corps detachment of the 6th Army. Based on the fitted radiator brush guards, both trucks on this page are wartime production models for the military. Credit: Jochen Vollert Collection



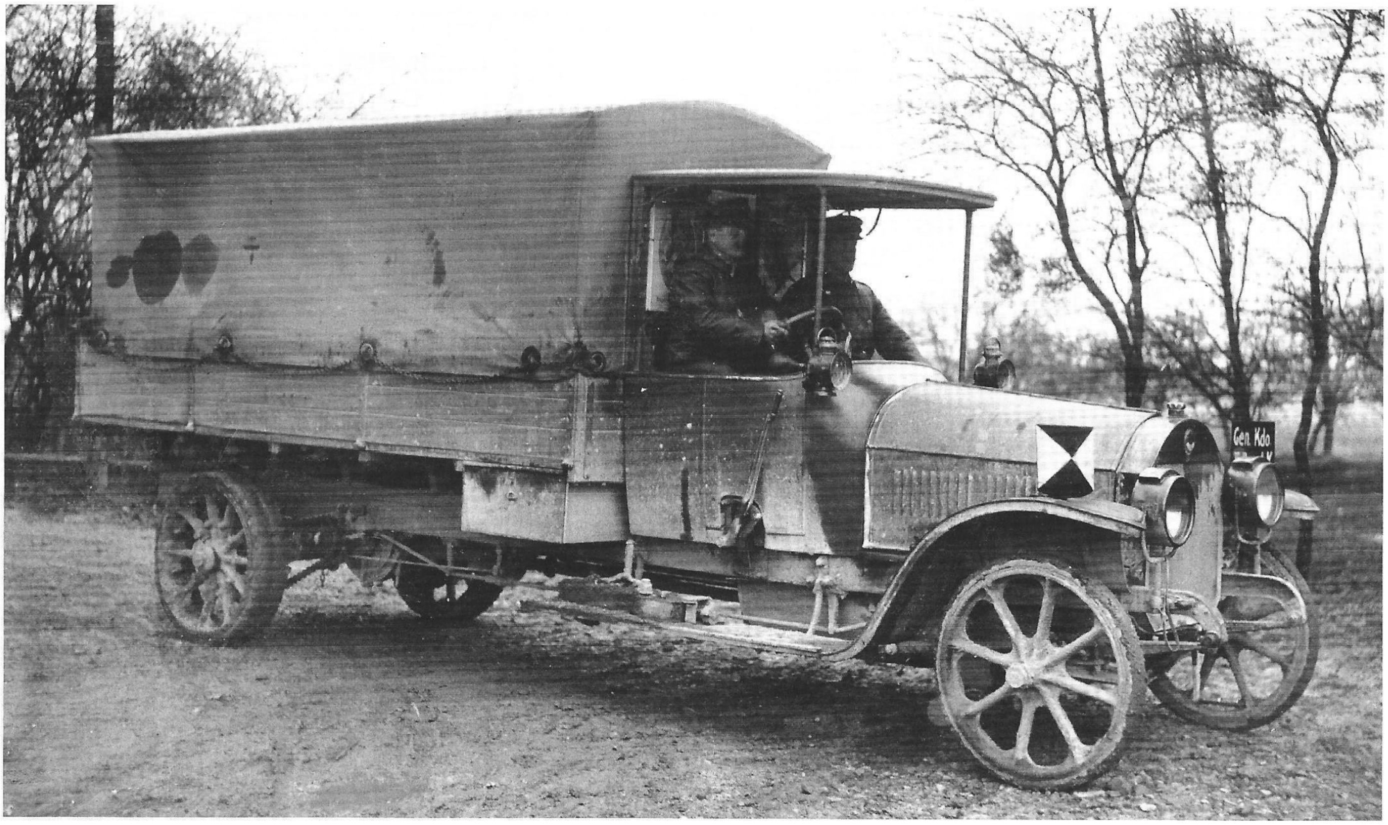
In general, Benz trucks with a chain drive can be split up into pre-war commercial models, pre-war commercial models that were also built as military versions (KL 14, BK 13 and ML 13) and wartime military versions (3 K, 5 K, 5 K 2). The tilted bonnet gives away that this is an impressed vehicle of the first group, a type SL 10 3-ton truck built from 1911-13. Note also the stretched non-military cargo bay with a rating of 2.4 tonnes. The marking on the bonnet and above the windscreen reveal that it is assigned to *Flugpark 2* (2nd Air Park) of *II Armee* (2nd Army).
Credit: Jochen Vollert Collection

Benz was a manufacturer where most of its models relied on a closed cab with a solid roof and windscreen. A folding canvas top was an extra on the commercial market that had to be ordered. This is presumably a GL 12 5-ton truck built between 1911-13. No markings are visible, yet the uniformed driver gives away that it is a military user.
Credit: Jochen Vollert Collection

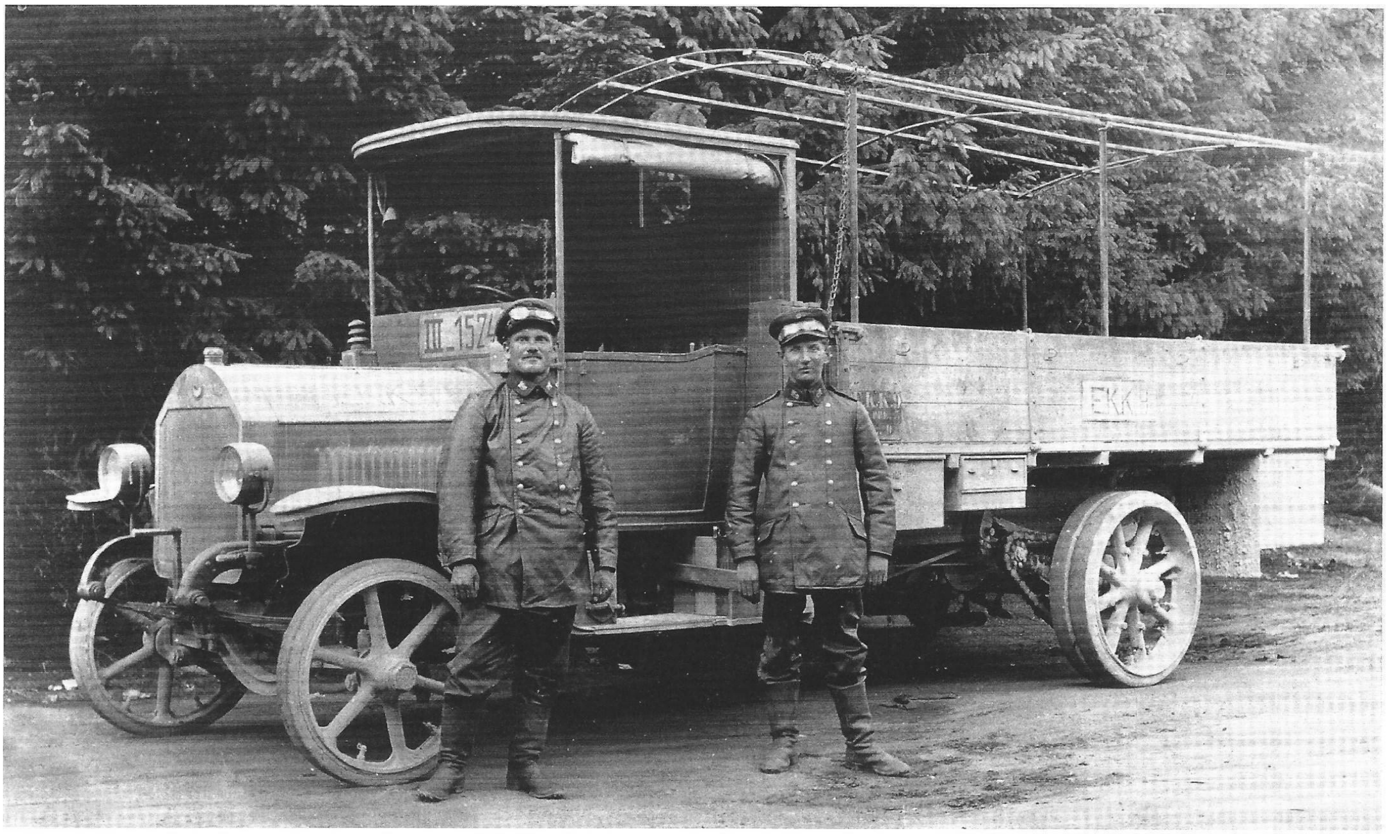




Impressed commercial models, in contrast to the *Militärausführung* or *Kriegstyp*, did not feature the military radiator brush guard. The short wheelbase of the example in this photo points towards a light truck in the 2-ton to 3-ton payload range, potentially a KL 14. The marking on the bonnet is that of a *Fernmelde-Abteilung* (signalling unit) of 6th Army. *Kraftwagen-Fernsprech-Bauzug* (signal construction) units were raised during the war to build or repair field telephone lines.
Credit: Jochen Vollert Collection

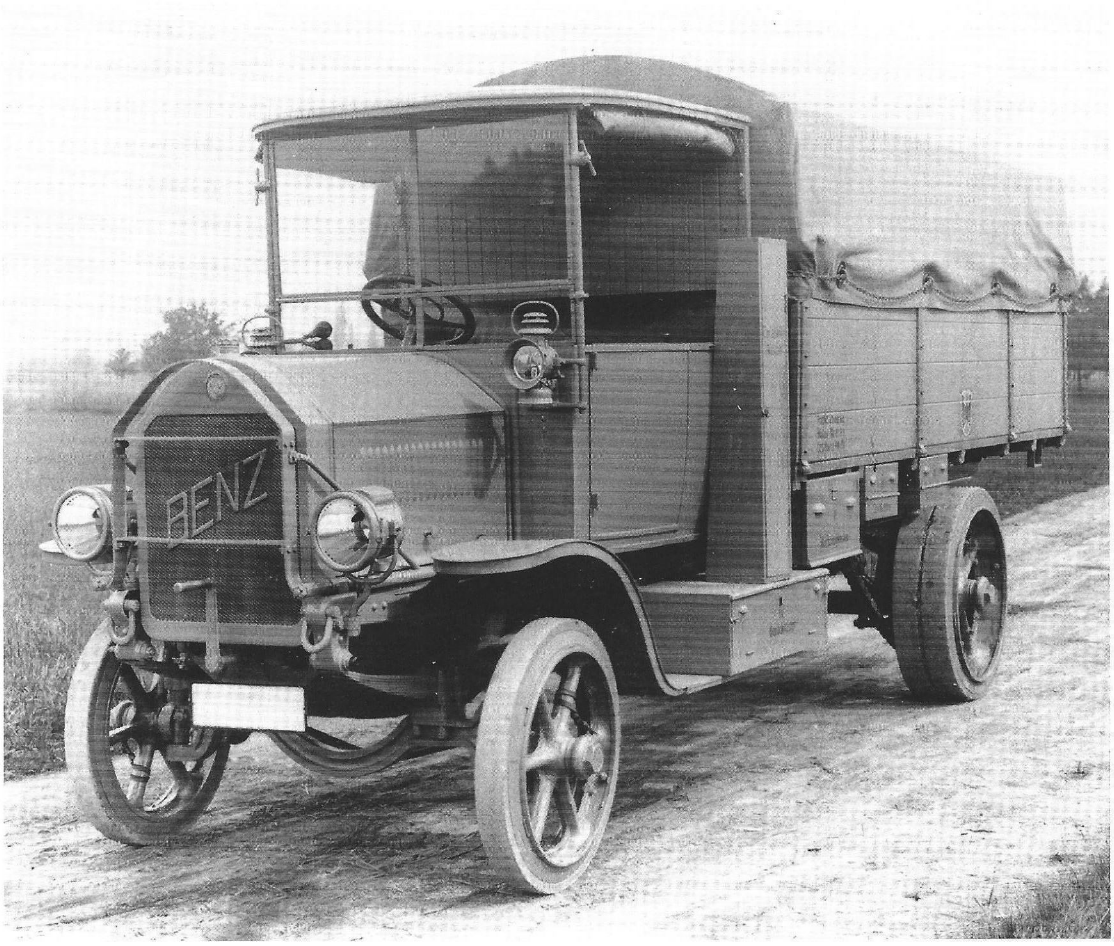


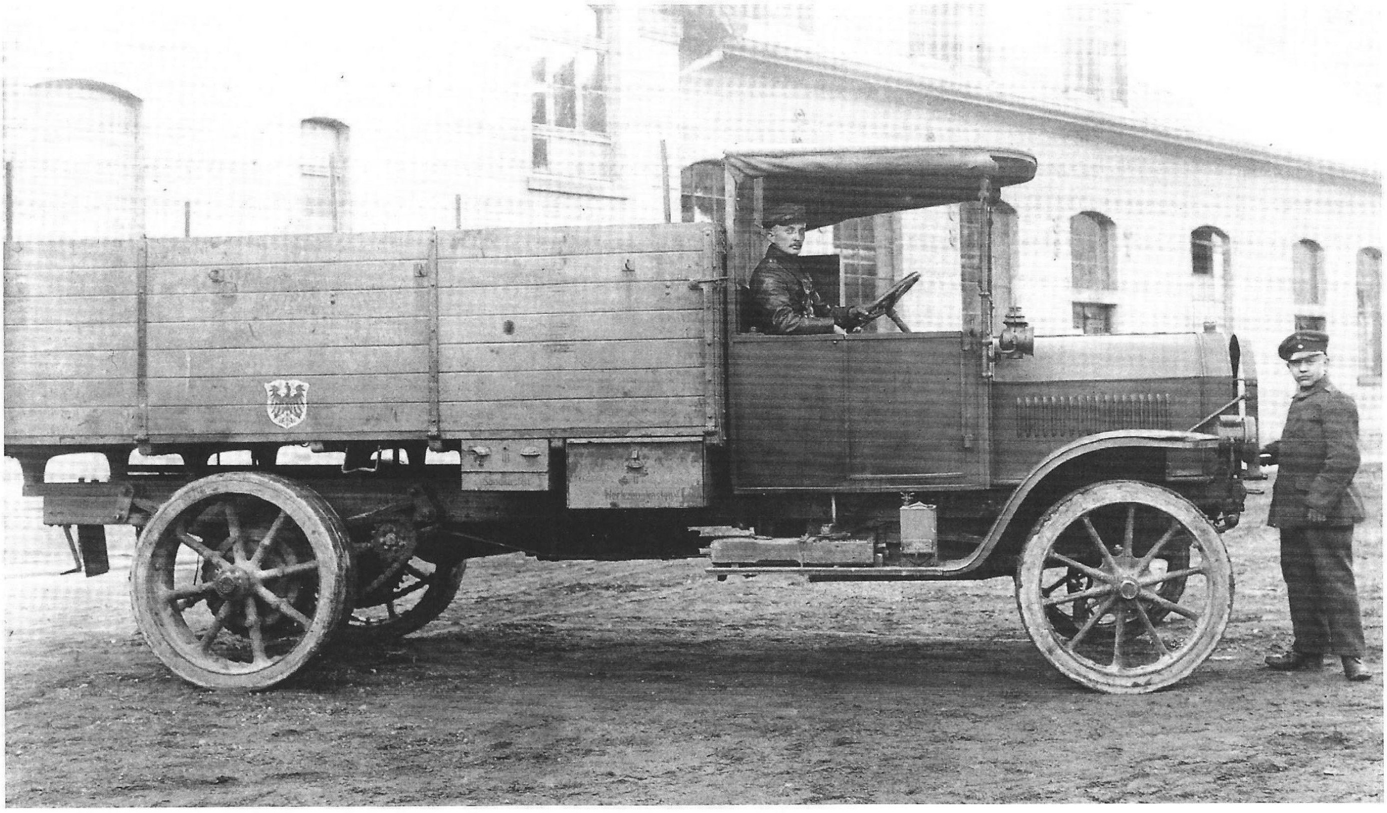
This interesting vehicle is another Benz SL 10 3-ton truck as built from 1911-13, yet this time a military version. The truck features a military-grade cargo bay but still not a radiator brush guard, thus making it a 1912 model. The pennants denote a *General-Kommando* high command unit. A particularly interesting and rarely seen civilian detail is the external gearshift lever of the driver. Credit: Jochen Vollert Collection



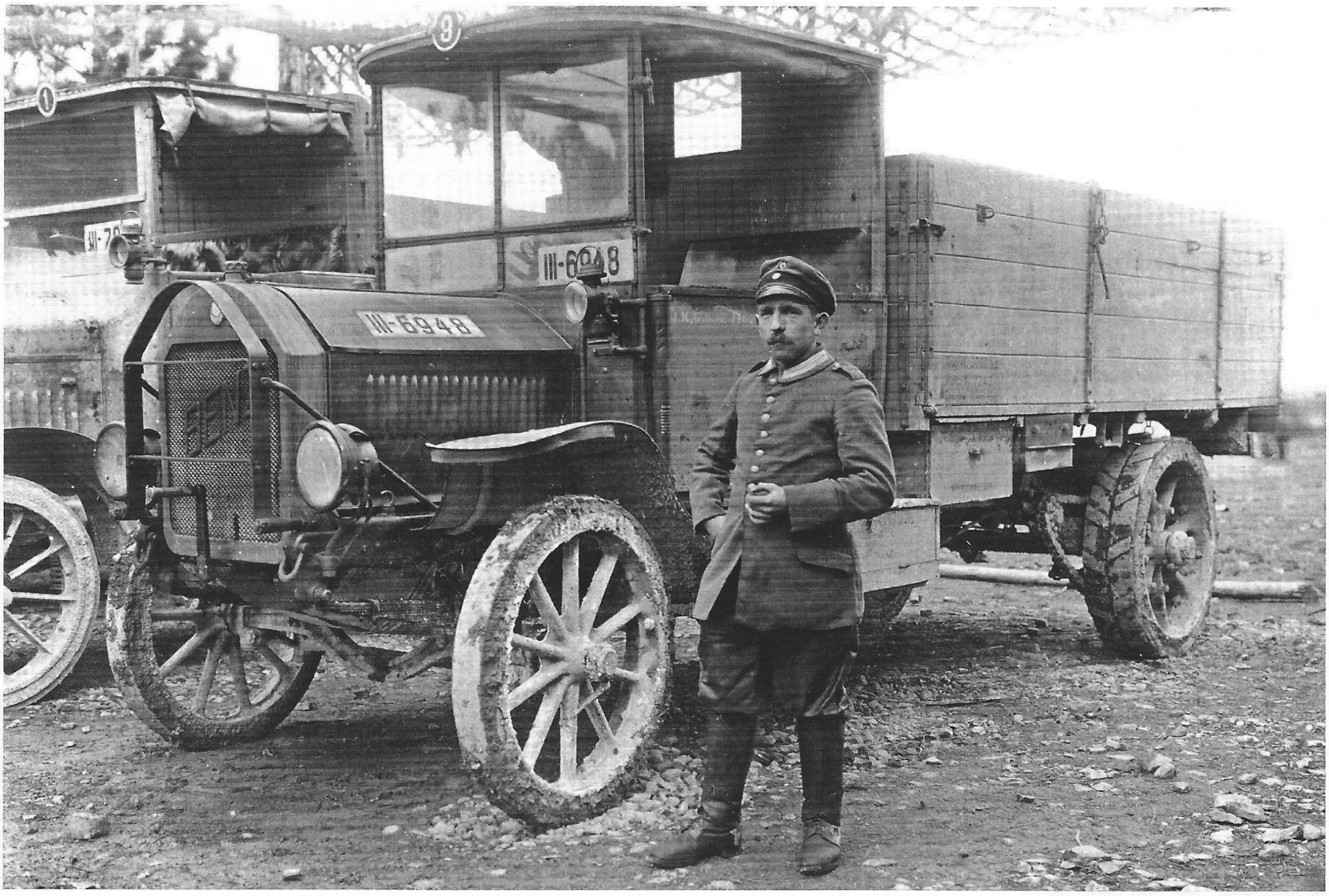
Benz KL 14, BK 13 and ML 13 trucks came as both civilian and military versions. This is a 3- to 4-ton BK 13 impressed commercial version that came without a military brush guard fitted. The truck shows all the details of Benz designs of the immediate pre-war period, including the closed cab, the chain drive and cargo bay with canvas cover and struts. This truck is in service with *Etappen-Kraftwagen-Kolonne 9* of *III Armee*. Note the military cast-metal wheels with six spokes, whereas civilian versions had eight or ten and were made of wood. A very close look reveals the worm screws to fit the solid rubber bandages to the cast metal wheels are secured by splint pins. Credit: Jochen Vollert Collection

The Benz range of military trucks can be identified by the flat bonnet, the radiator with brush guard fitted, the closed cab with roof, doors and windscreen, the six-spoke cast-steel front wheels and the cast-metal double rear tyres in connection with a military-grade cargo bay. In many cases the full set of military equipment boxes, including the *Gewehrkasten* rifle box (next to the door), are fitted. Apart from differentiation between the KL 14, BK 13 and ML 13 in the *Kriegsausführungen* in 1914-16, the changes of the 3 K 2, 5 K and 5 K 2 wartime models in reference to their years of production are not on record. This is an official Benz factory photo showing a 1917-model 5 K 2, the version with a 4-ton payload and thus the 45hp engine.
Credit: Werksfoto - Jochen Vollert Collection

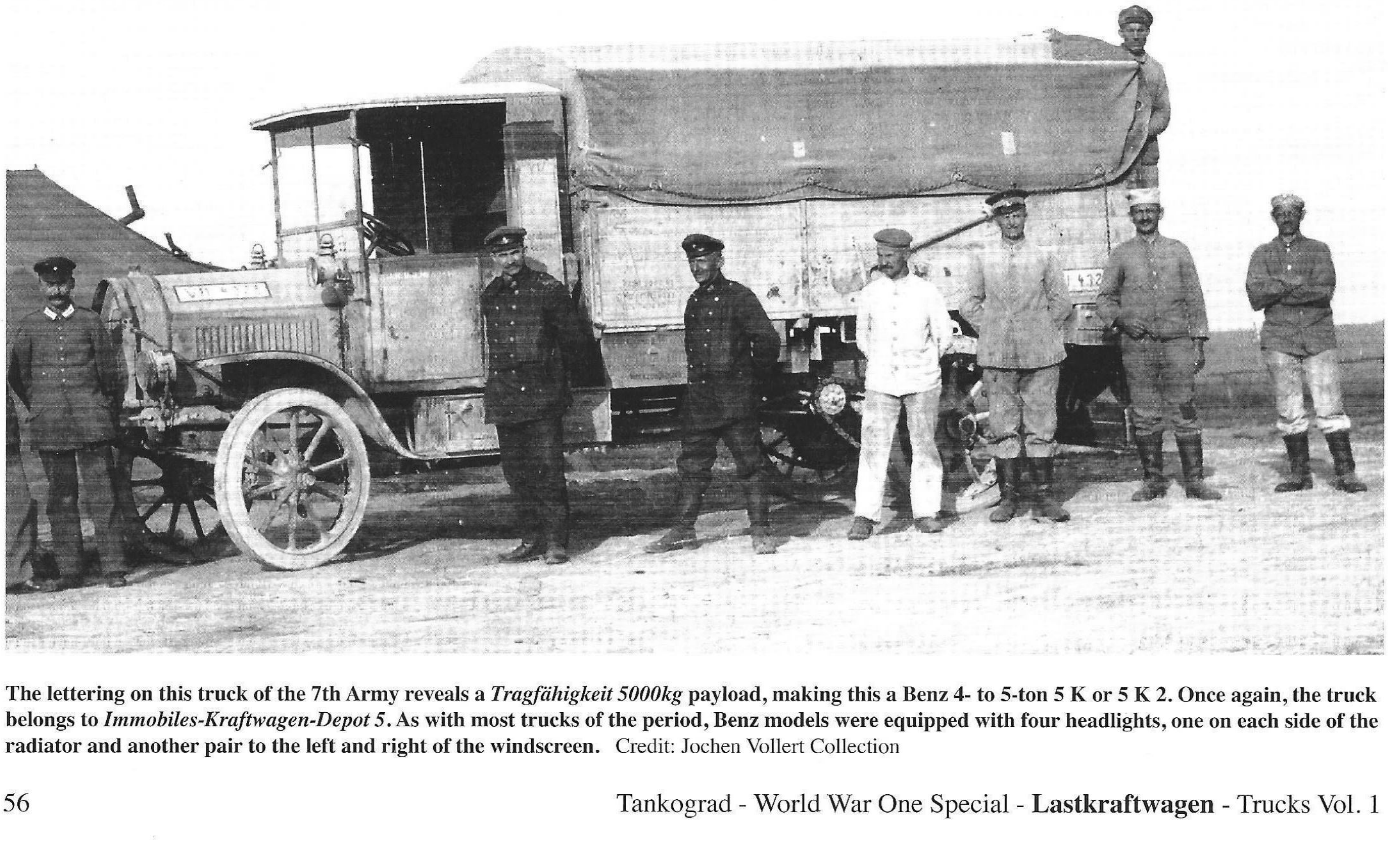




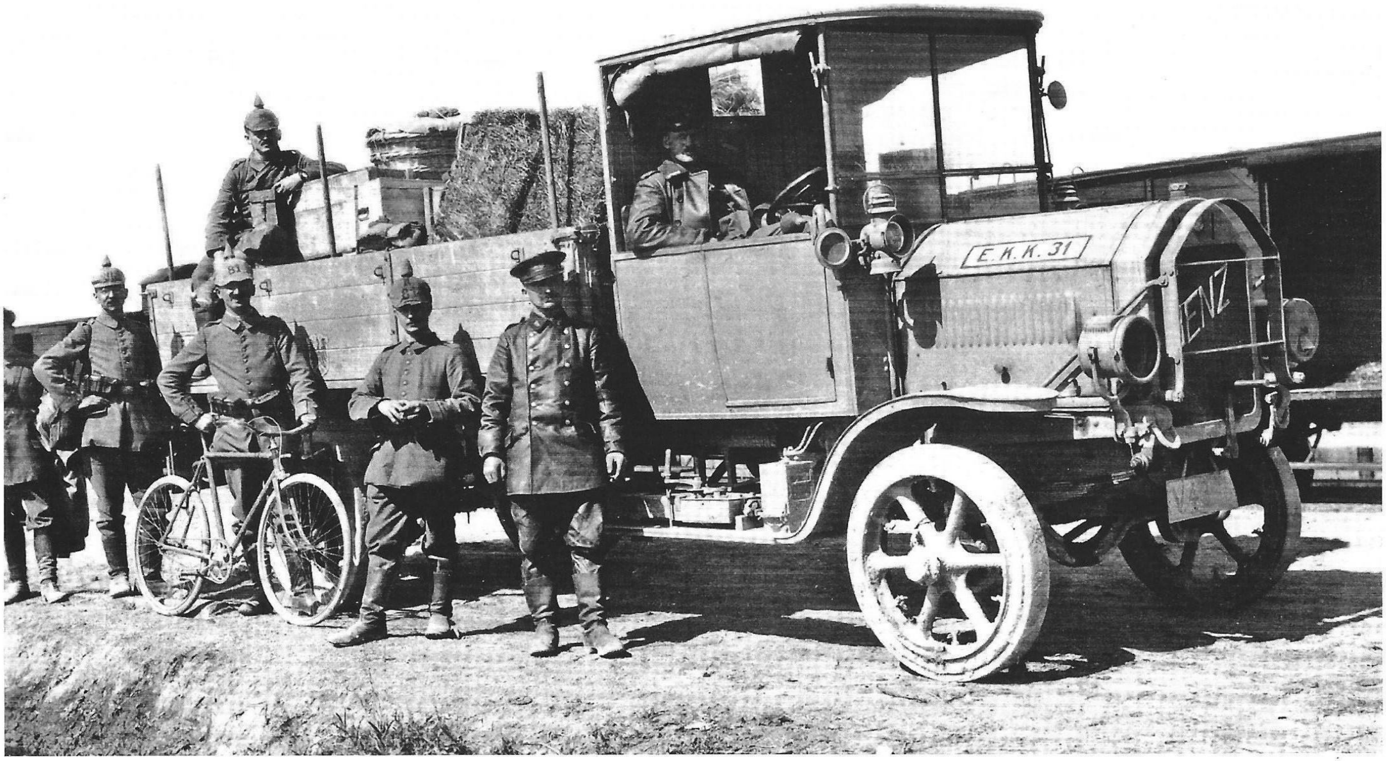
A typical feature for the military-grade cargo bay is the high-board side panels in combination with a tarpaulin cover and struts. This right-hand side view shows the Benz military truck design in all its glory, including the flat bonnet and line of louvres on the sides of the engine compartment. Note also how the radiator brush guard is attached. This example does not carry any tactical markings, with only the Prussian crest on the side of the cargo bay. All Benz military truck models featured a chain drive on the rear axle before the ET 3 reintroduced the Cardan drive in 1918, as had been used on the pre-war 0.5-ton to 1.5-ton light truck models. Credit: Jochen Vollert Collection



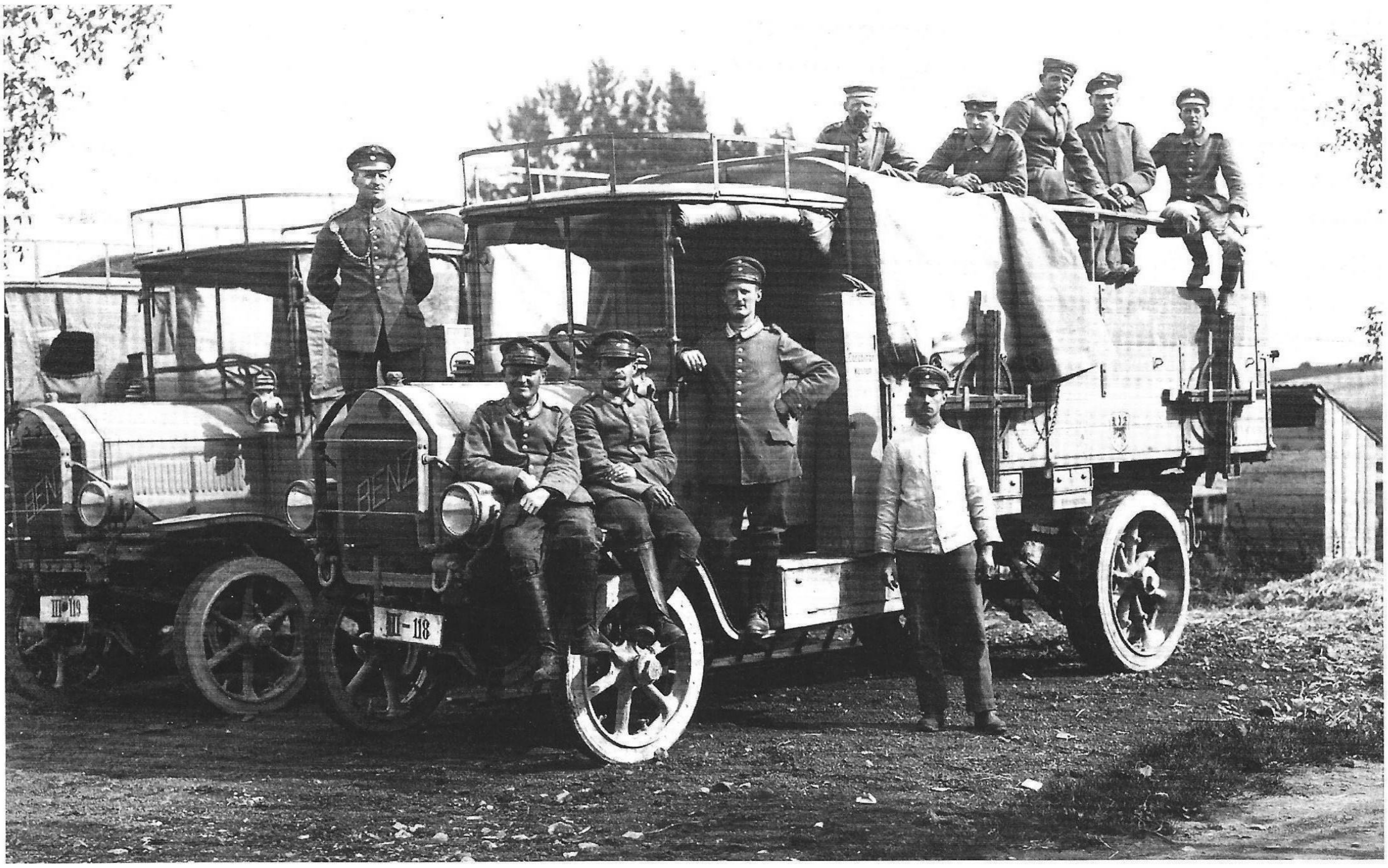
Markings help solve problems. In this case the lettering on the left-hand side of the cargo bay's side panels reveals *Tragfähigkeit 3000kg*, making this a Benz 3-ton K 2. The licence plate represents the 3rd Army, while the round placard on the upper end of the windscreen denotes vehicle no. 9 of the (note the lettering on the assistant driver's door) *Immobiles-Kraftwagen-Depot 5* (5th Immobile Motor Vehicle Depot). This truck is equipped with commercial wooden front wheels with ten spokes, yet it features anti-slip tread on the rear double tyres. Credit: Jochen Vollert Collection



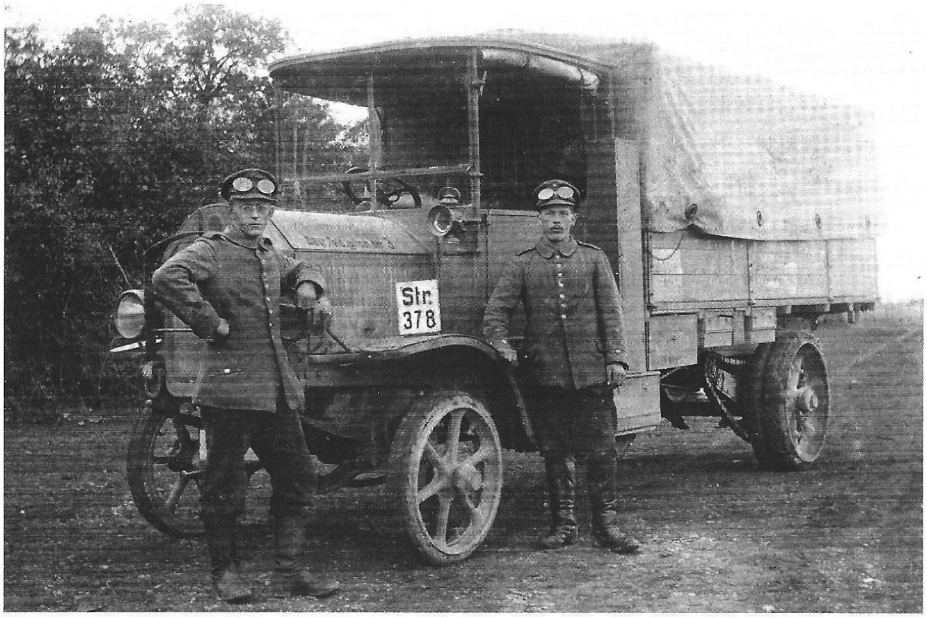
The lettering on this truck of the 7th Army reveals a *Tragfähigkeit 5000kg* payload, making this a Benz 4- to 5-ton 5 K or 5 K 2. Once again, the truck belongs to *Immobiles-Kraftwagen-Depot 5*. As with most trucks of the period, Benz models were equipped with four headlights, one on each side of the radiator and another pair to the left and right of the windscreen. Credit: Jochen Vollert Collection



Although this picture is not dated, the piked helmets show this is from the early war years. This Benz truck is serving with *Etappen-Kraftwagen-Kolonne 31* of the 5th Army. It was quite common to see the large 'BENZ' lettering on the radiator of both commercial and militarised versions. Credit: Jochen Vollert Collection

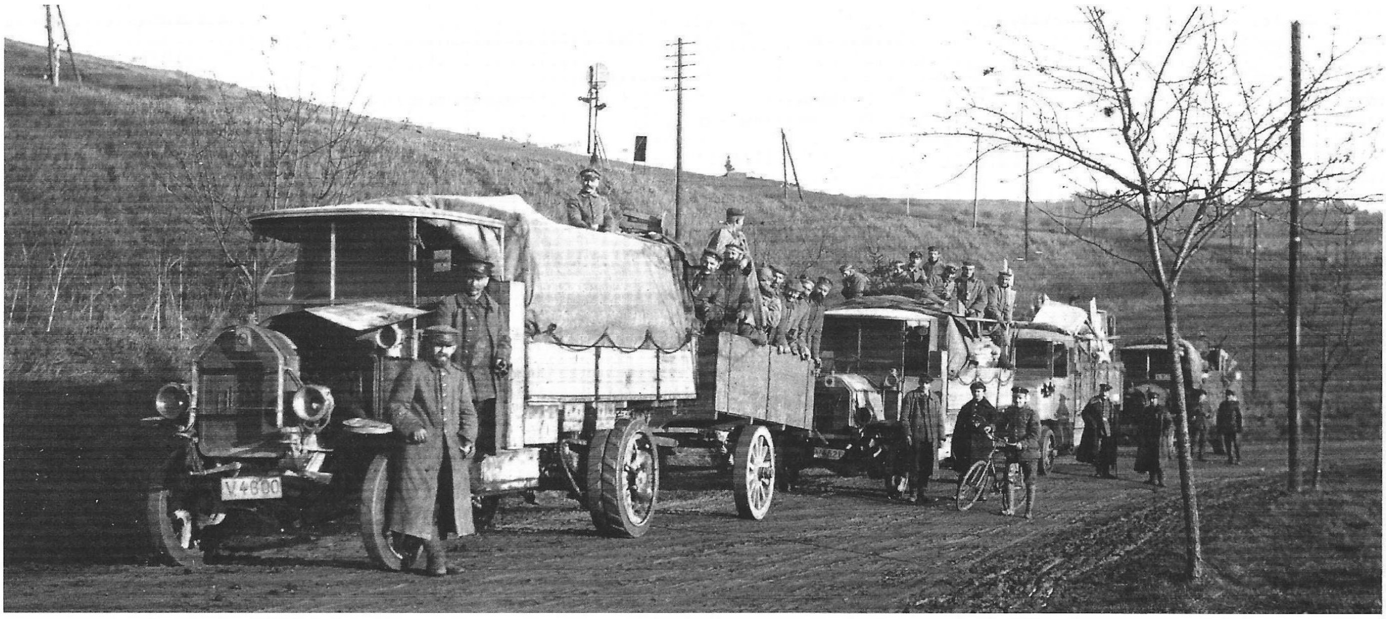


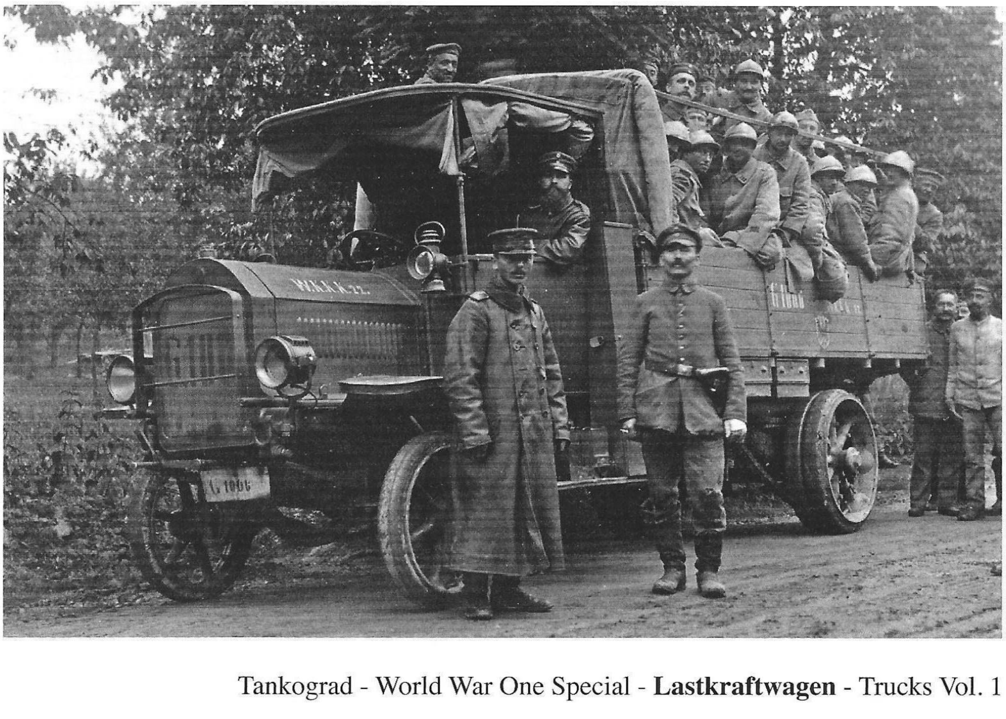
Another Benz military truck version, this time from the 3rd Army; note the '*III*' licence plate. Also note the *Carabinerkasten* rifle box, and that this particular vehicle features military-type front wheels with only six spokes. Another interesting detail is that the truck has been equipped with a roof rack on the hardtop cab. Credit: Jochen Vollert Collection



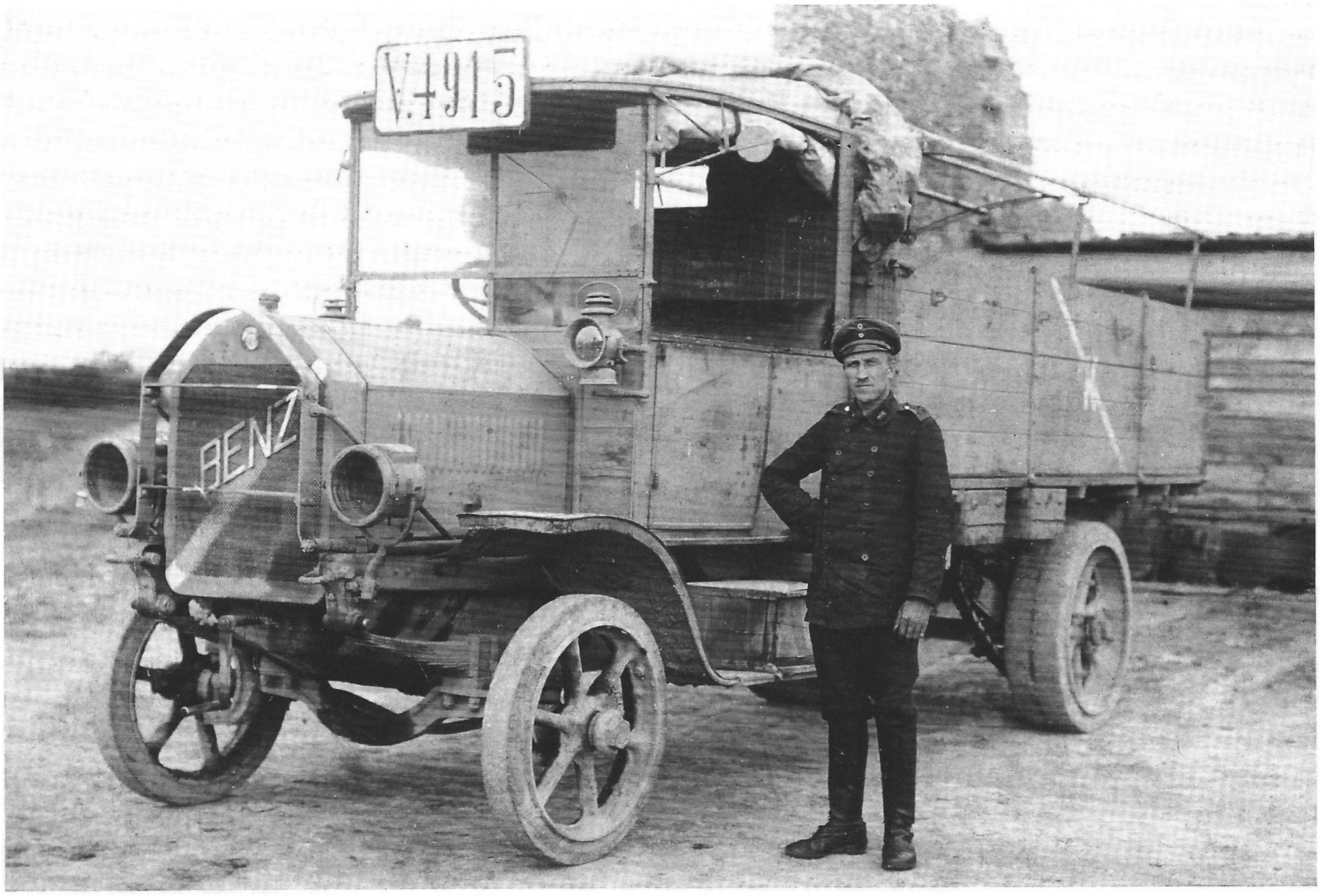
Boasting the marking of *Bayerische Feld-Luftschiffer-Abteilung 3* (3rd Bavarian Balloon Corps Detachment) on the bonnet, the licence plate of this Benz is that of *Armee-Abteilung Strantz*.
Credit: Jochen Vollert Collection

Two Benz 3-ton or 5-ton trucks take a technical halt during column duty. The early engines had a tendency to overheat, while the standard solid-rubber tyres offered only limited grip on soft wet roads – note the anti-slip tread pattern on the rear wheels here. Using a one-axle trailer was not standard military practice, and the instability of this combination becomes apparent in this photo.
Credit: Jochen Vollert Collection

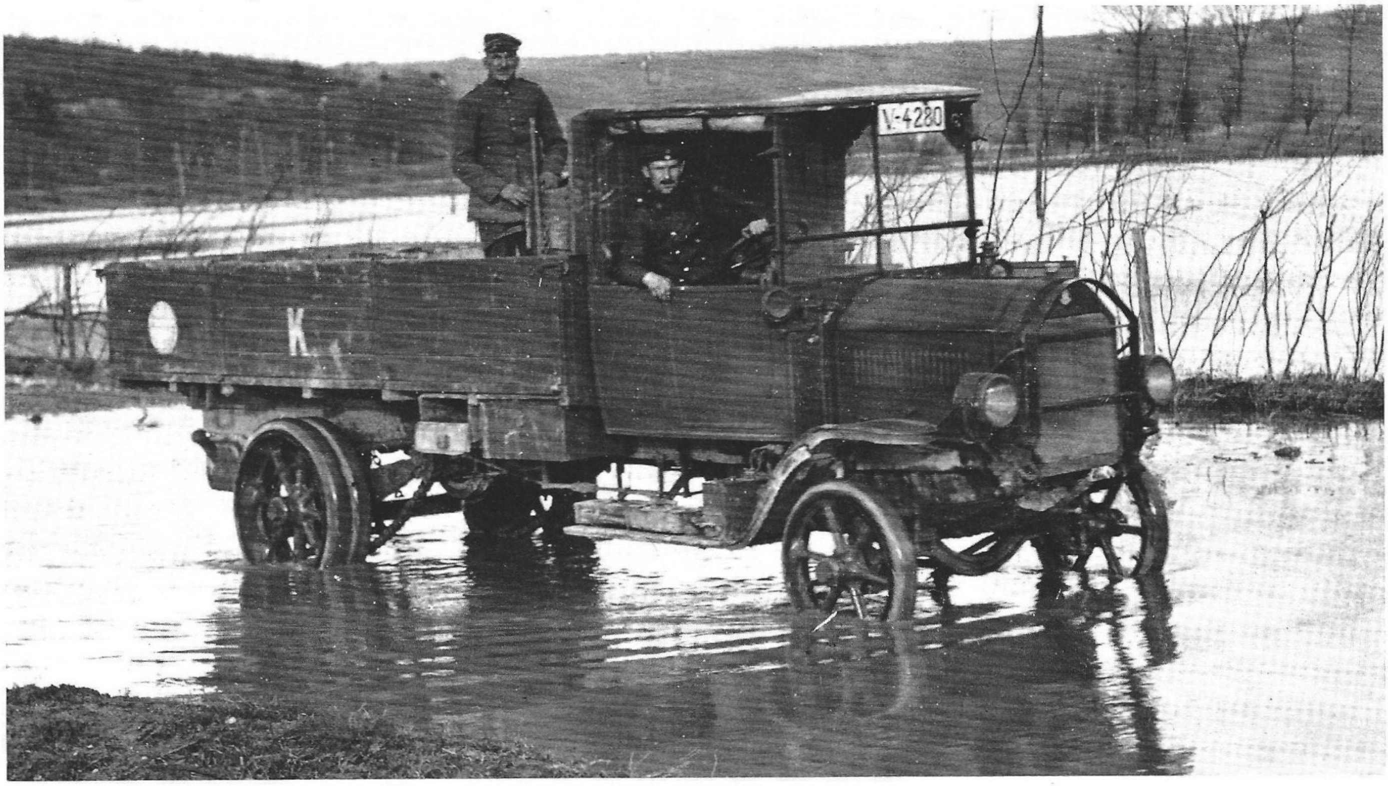




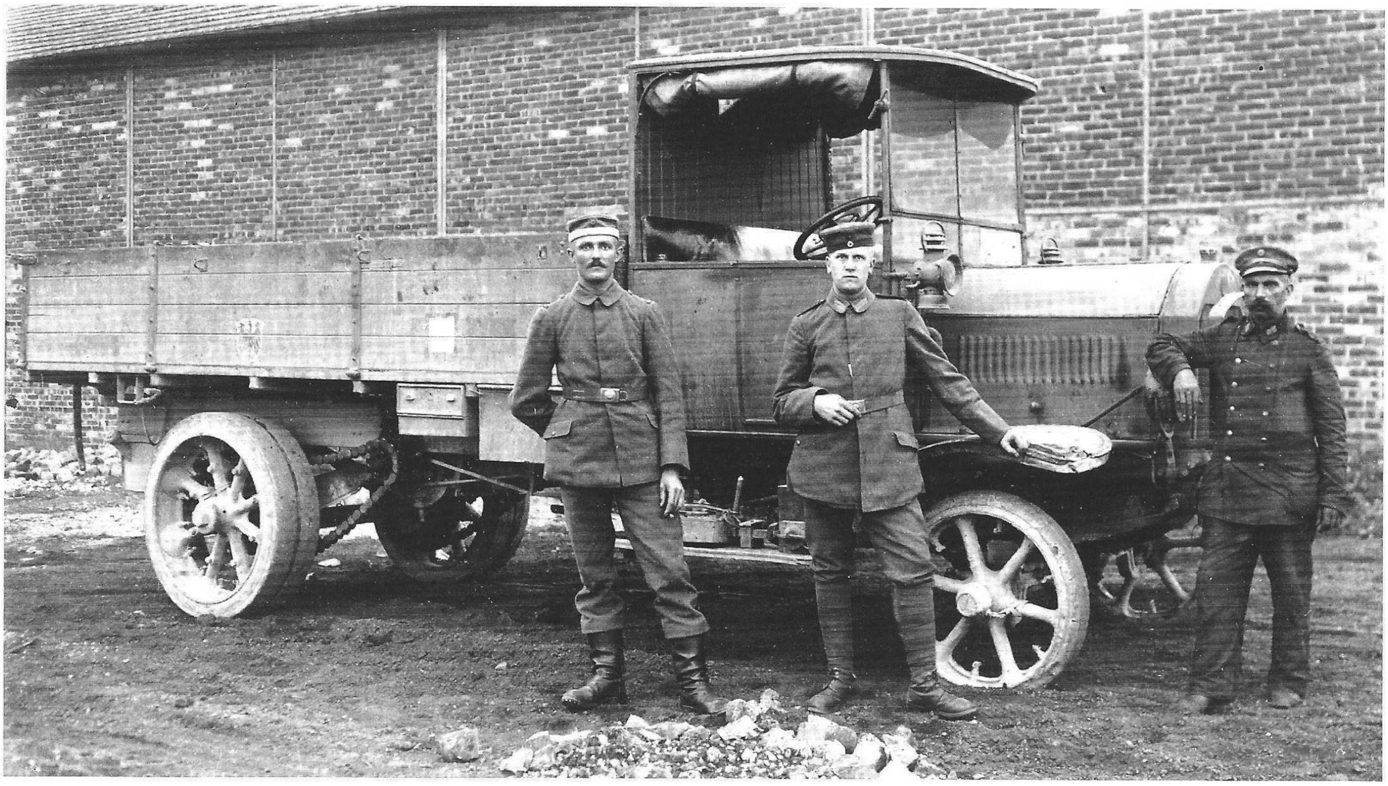
Captured French soldiers are taken into German-occupied territory. The Benz carries some interesting markings such as the licence plate *G 1006* of *Armee-Abteilung Gaede*; note that the number is repeated on the radiator front as well as on the side of the cargo bay – a quite unusual practice. The marking '*W.K.K.K. 22*' stands for *Württembergische Korps-Kraftwagen-Kolonne 22*.
Credit: Jochen Vollert Collection



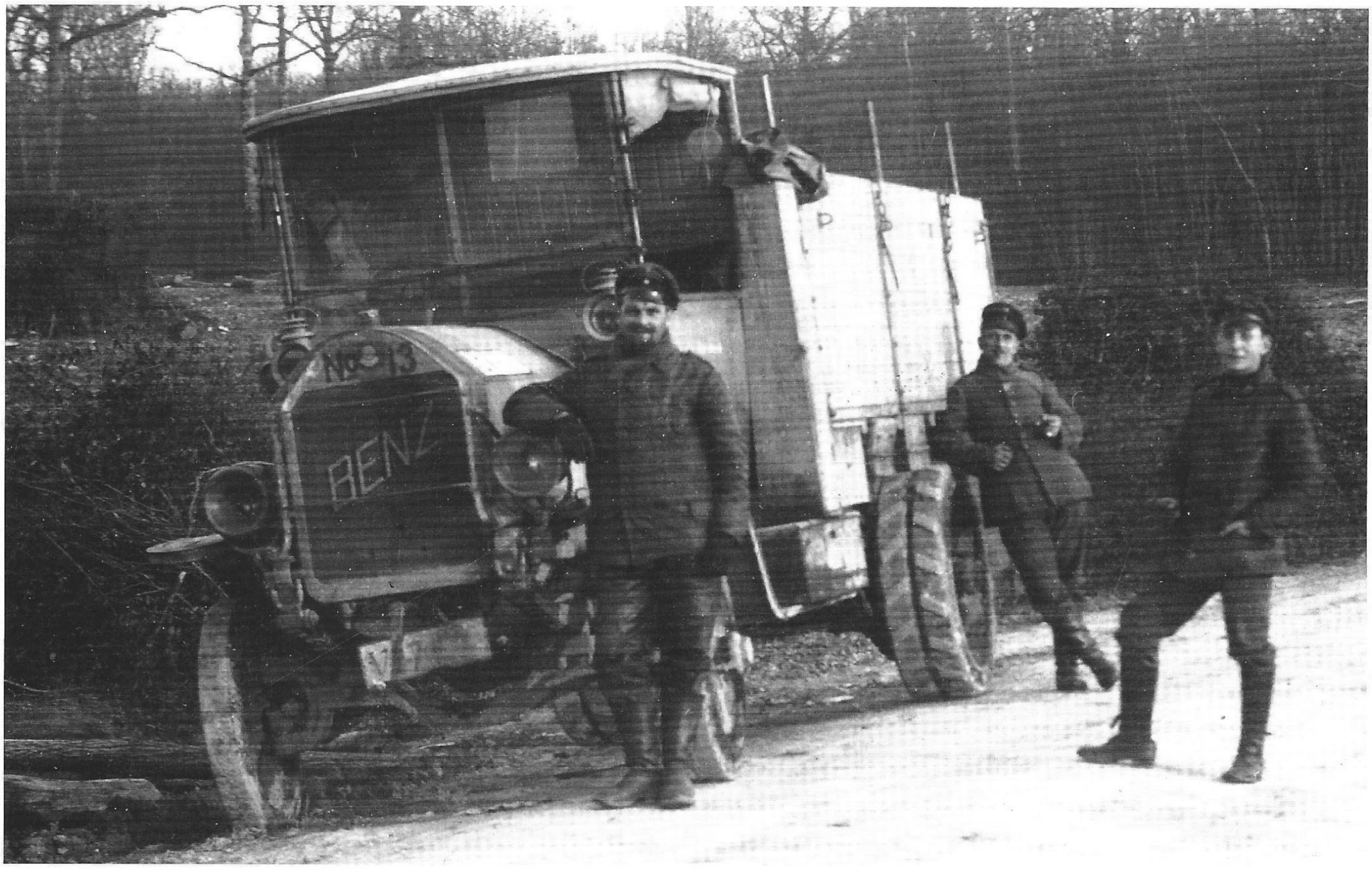
"High visibility" in the 1910s. The unit of the 5th Army operating this truck obviously wanted to make sure the licence plates were readable even from far away! Note the particularly well-visible 'BENZ' logo on the radiator. It is not painted on but is made of metal letters. Interesting is the marking in the form of a white stripe across the radiator; the stripe is also repeated on the side of the cargo bay. The meaning of the '*K*' marking is *Küstenverteidigung* coastal defence, as used from 1916-18. Note also the absent screws to fit the rubber bandages to the metal running surfaces of the wheels making this a once-piece wheel without the option of replacing solid rubber elements when worn out. Credit: Jochen Vollert Collection



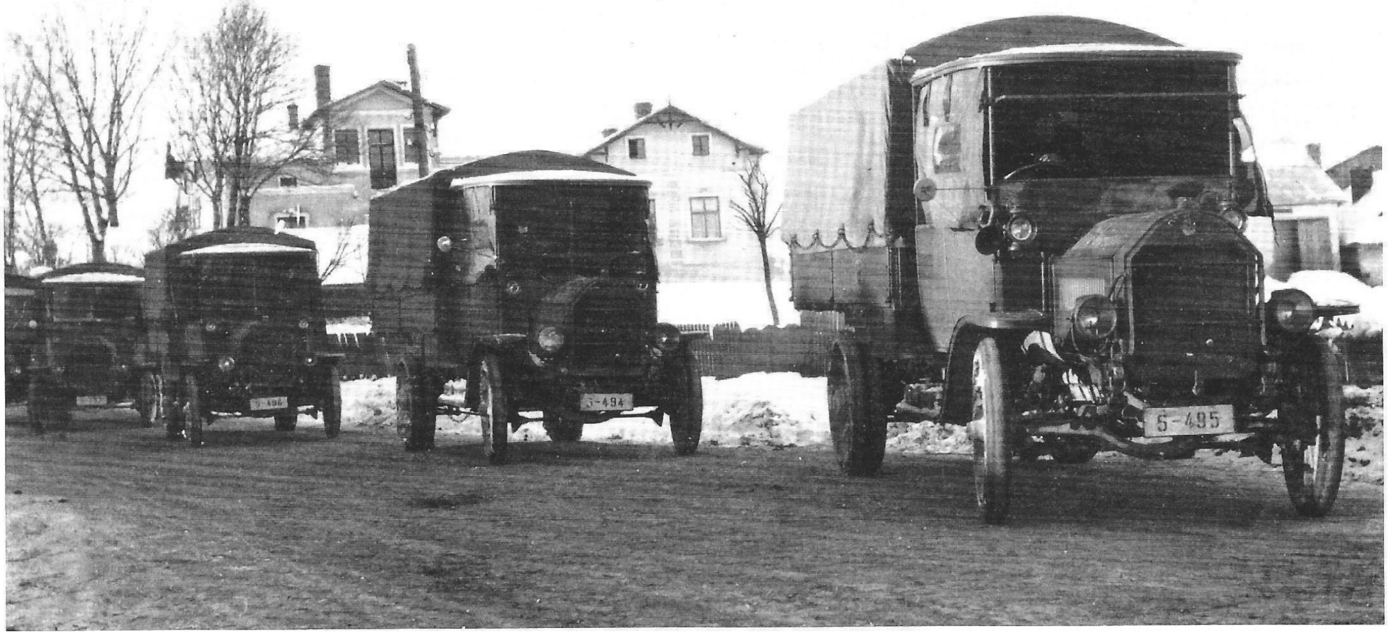
Another Benz truck of *Küstenverteidigung*. Note the '*K*' marking and also the 5th Army licence plate. Credit: Jochen Vollert Collection



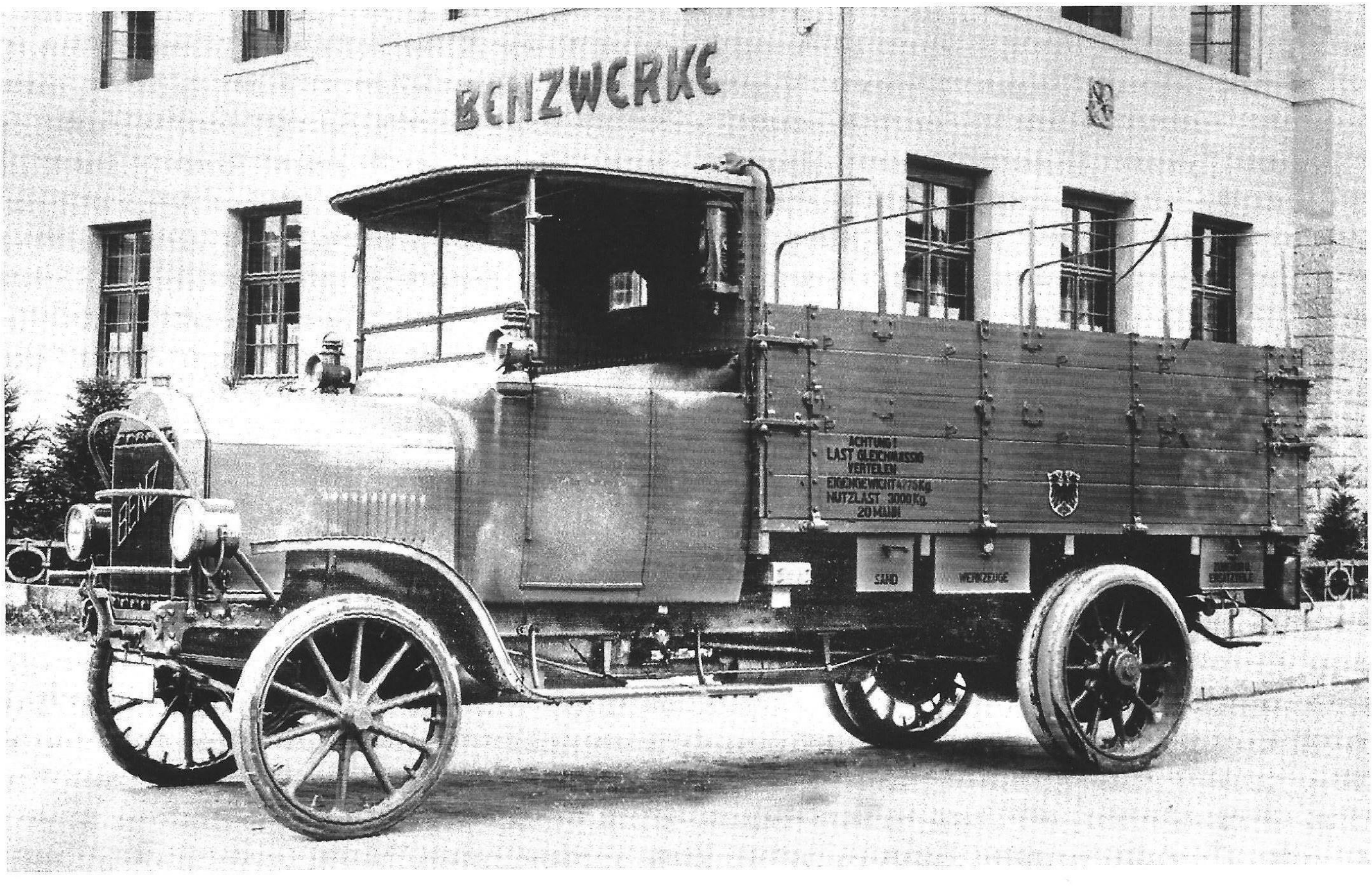
The dry mud on the chassis brings out the design of the military-grade cast metal single front and double rear wheels. Well recognisable are once more the worm screws to fit the solid rubber bandages to the cast metal wheels and their securing splint pins. The standard cargo bay is the high side-panel version, (see below) yet a low-panel version also came into use, such as fitted here. Note the rolled-up tarpaulin on the side of the cab; it was lowered to protect the crew from foul weather. A look into the cab reveals comfortable cushions for the crew bench - its a Benz.
Credit: Jochen Vollert Collection



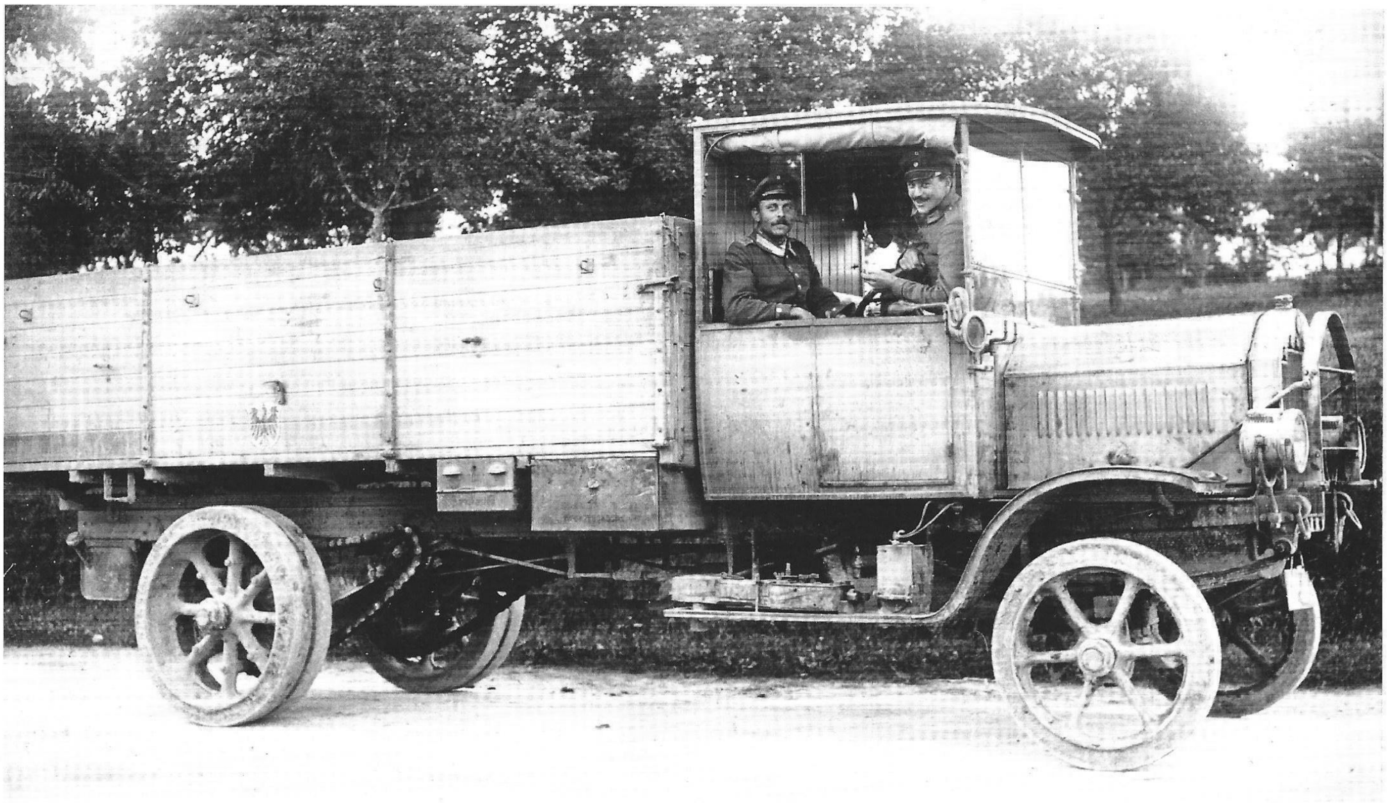
Wheels rimmed with solid rubber were standard issue with German trucks of World War One, as pneumatic tyres were in short supply and not capable of dealing with heavy loads. On wet roads it became necessary to mount anti-slip tyres, as fitted on the rear axle of this truck. This is *Wagen* number 13 of a unit from the 5th Army. Credit: Jochen Vollert Collection



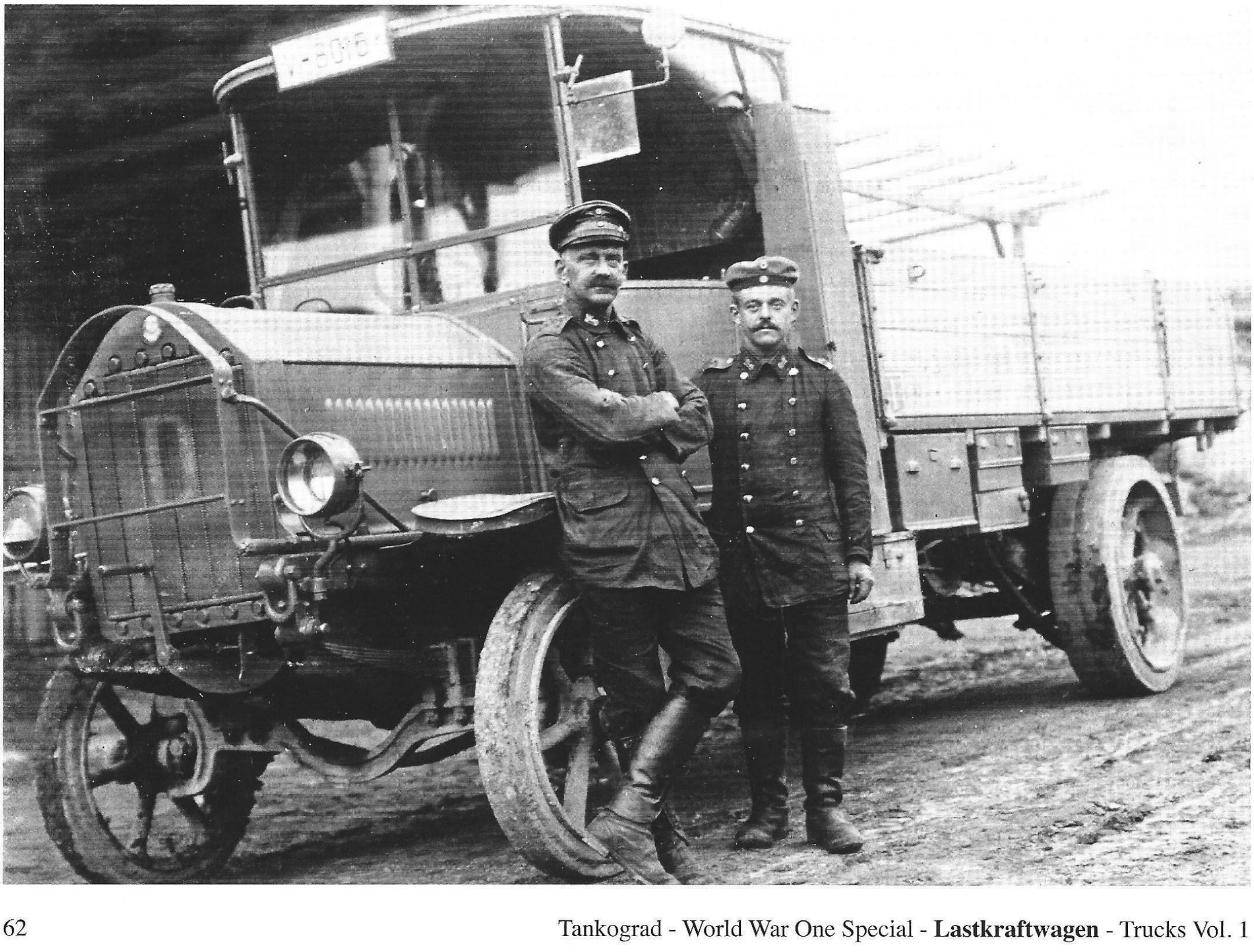
A column of Benz 3-ton trucks in wintertime; note the full set of tarpaulins and the winterisation kits for the sides of the cab. The '*S*' licence plates are those of the *Südarmee* (Army of the South, operating e.g. in the Carpathian Mountains and in Eastern Galicia in support of the Austrian Army) as used in 1915-18. Credit: Jochen Vollert Collection

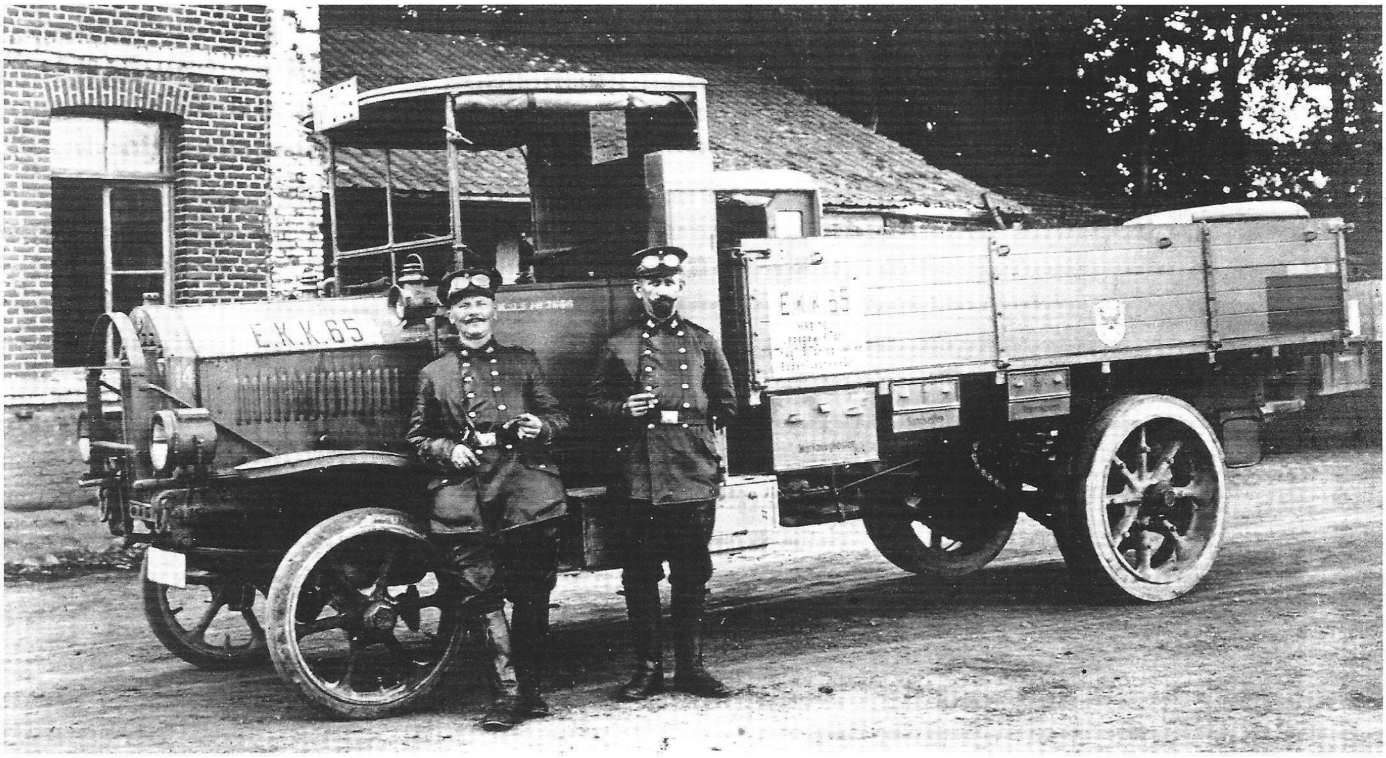


In 1918, Benz introduced its last wartime truck model, the 3-ton ET 3 that came with either a 45hp or 50hp engine. The most prominent feature of the ET 3 was that this design used a Cardan drive rather than a chain drive on the rear axle. Based on a lack of evidence, it remains unclear if the ET 3 ever left the prototype stage and, if introduced into the army, how many were built in the last months of the war. Note the new type of screwed radiator, new brush guard, the revised design of the louvres on the engine compartment sides, yet it still has commercial wooden wheels with ten spokes in this factory photo of the prototype. The lettering on the cargo bay side panel reads: *Achtung! Last gleichmässig verteilen* (distribute loads evenly), *Eigengewicht 4275 Kg* (empty weight), *Nutzlast 3000 Kg* (payload), *20 Mann* (soldiers). Credit: Werksfoto - Mercedes-Benz Classic

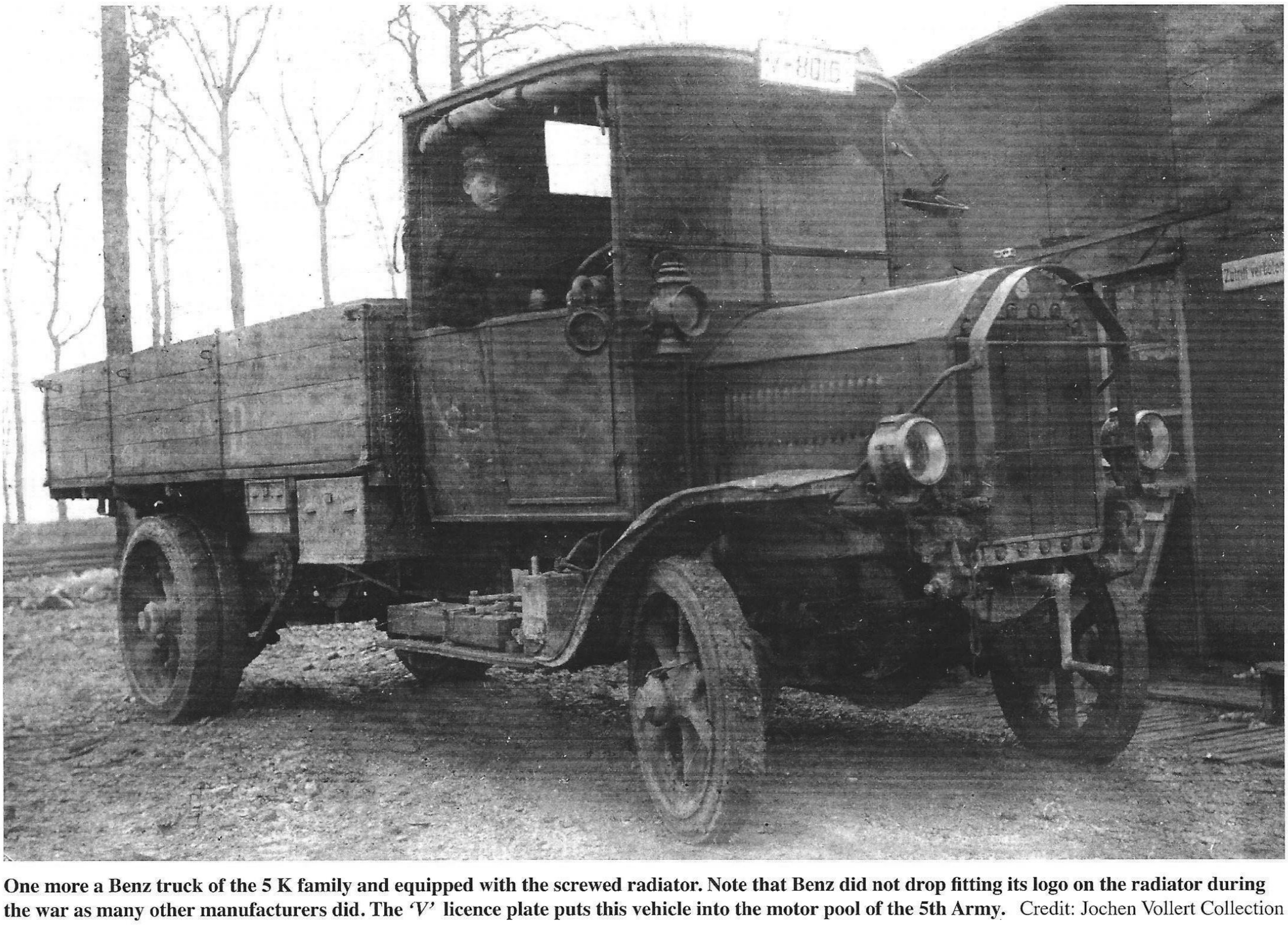


Aside from its regular radiator design, Benz introduced a new radiator type later in the war, one which can be identified by the six screws on the front. The bolted design eased radiator repairs, as now it could be removed in parts rather than as only one piece on older models. The truck on the photo below carries a 5th Army licence plate and the '*D*' marking of *Armee-Abteilung D* (1917-18) painted both on the front of the radiator and the side of the cargo bay. The photo above is dated July 1917. Credit: Jochen Vollert Collection





Another Benz truck of the 5 K family and once more equipped with the screwed radiator. The markings denote *Etappen-Kraftwagen-Kolonne 65* of *Immobiles-Kraftwagen-Depot 5*, *Wagen 3666*. The payload of the 5 K truck family is legible on the black on white marking on the left side of the cargo bay: *Leergewicht* (empty weight) *4 Tonnen*, *Tragfähigkeit* (payload) *5 Tonnen*. The black box at the rear of the cargo bay's side is reserved for notes on the load of the truck when on specific duty. The driver would write e.g. *Holz* (wood) on in it in white chalk and delete after the freight has been delivered. Credit: Jochen Vollert Collection



One more a Benz truck of the 5 K family and equipped with the screwed radiator. Note that Benz did not drop fitting its logo on the radiator during the war as many other manufacturers did. The *'V'* licence plate puts this vehicle into the motor pool of the 5th Army. Credit: Jochen Vollert Collection

03.6 Bergmann / Bergmann Trucks

Among the more enigmatic German truck makers of the early 20th century was Bergmann-Electricitäts-Werke AG from Berlin. Founded in 1899 as a manufacturer of batteries, electric trains and dynamos, it expanded in 1909 to build passenger cars under licence from the Belgian Metallurgique company. Soon after, electrically powered commercial vehicles followed.

In 1912 Bergmann launched a 2-ton truck with a 24hp engine, and a 4-ton truck with a 4-cylinder 32hp 5699cc engine for the civilian market. Of the latter, only twelve were built from 1912-14.

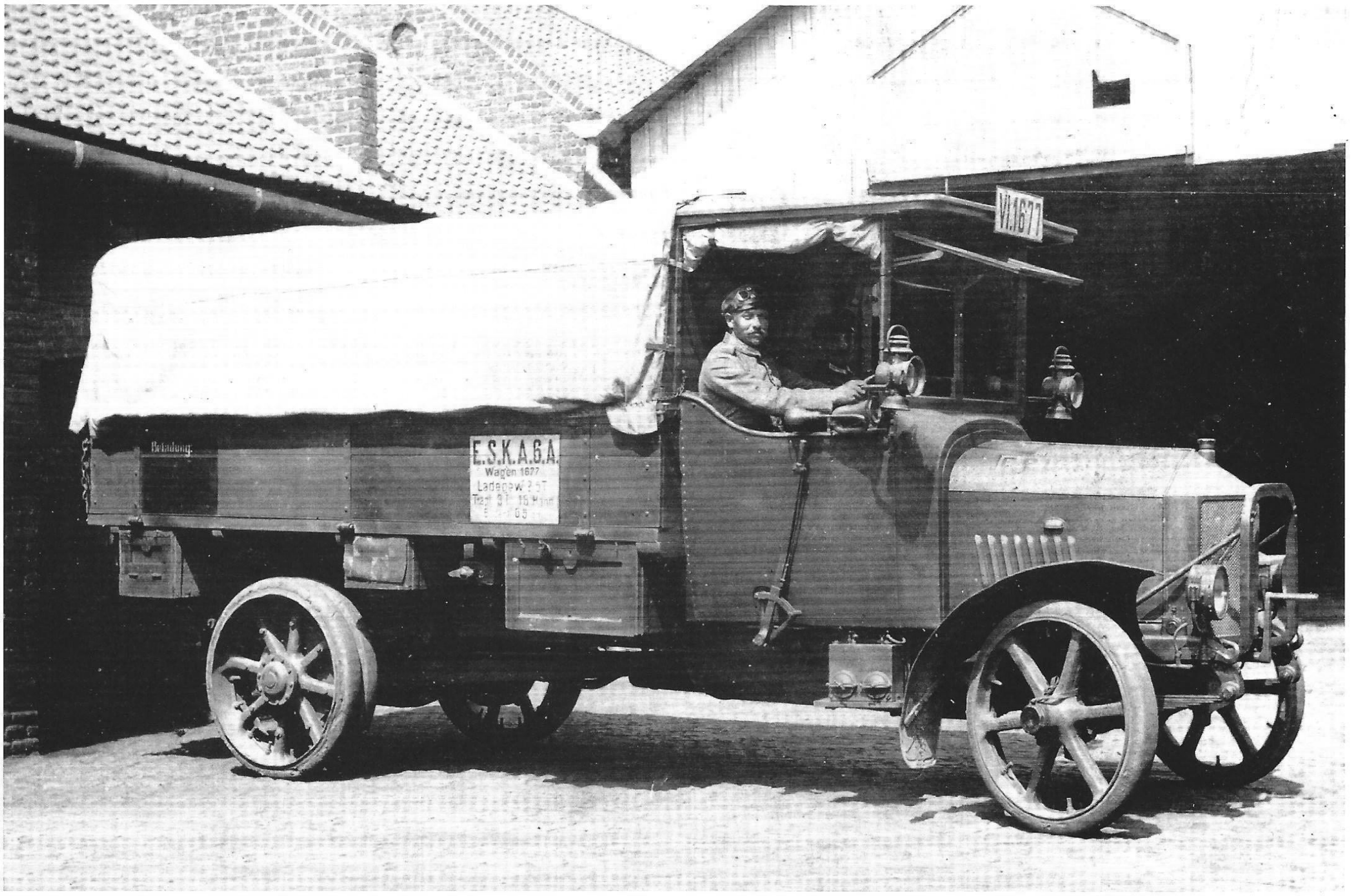
Based on the Bergmann 1912 design of a 4-ton truck with 32hp engine, the company continued to build two military versions of this vehicle from 1914. It can be assumed that external features of the military trucks were similar if not identical to the commercial pre-war version:

° 3.5-ton powered by a 4-cylinder 38hp 3565cc engine
° 4.5-ton powered by a 4-cylinder 40hp 5699cc engine

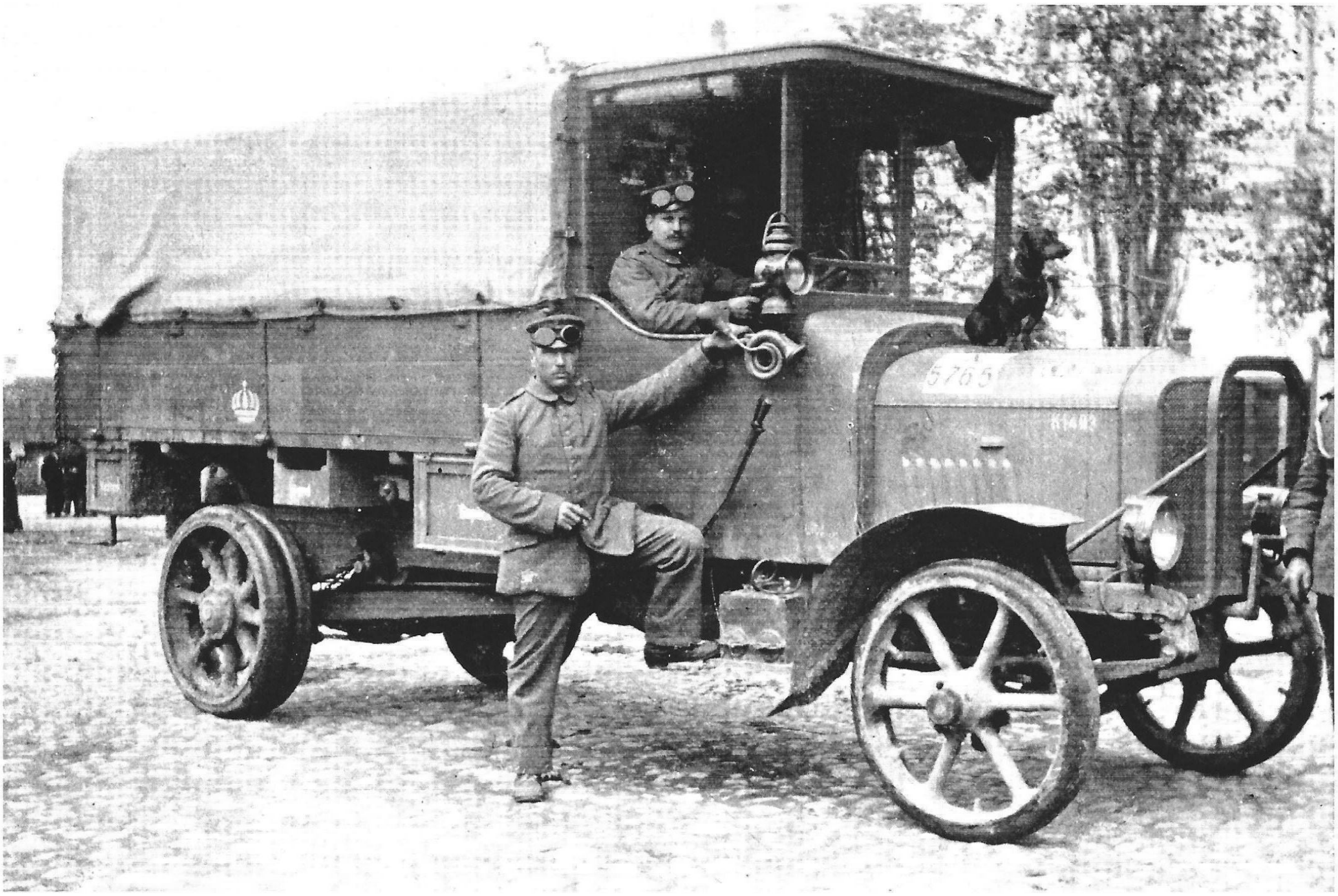
Additionally Bergmann built a

° 2.5-ton powered by a 4-cylinder 50hp 4720cc engine

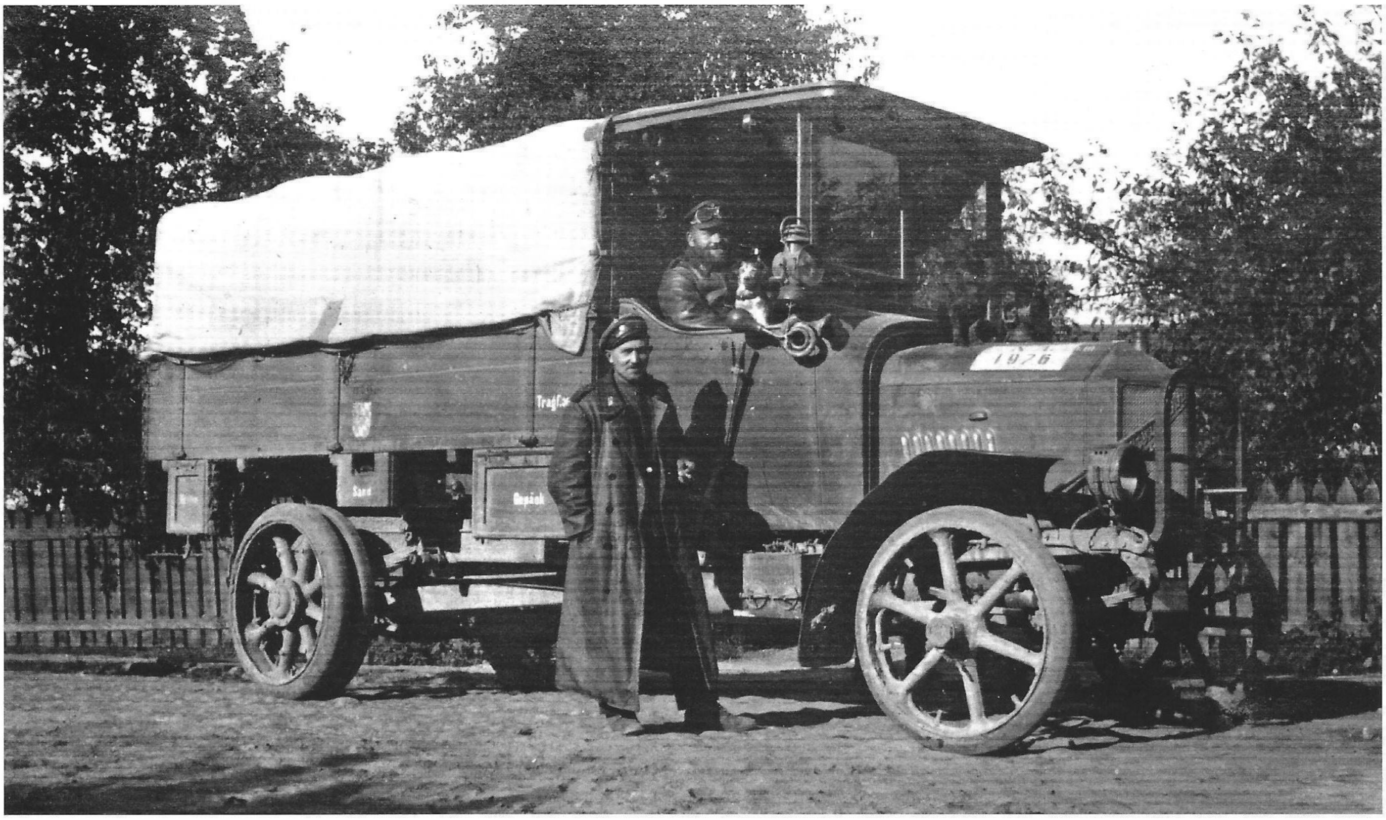
Before the war the Bergman production output was extremely small, during the war quantities were increased to only about 100 trucks per year. In consequence, Bergmann trucks remained a truly scarce sight in the army.



Primary identification features of Bergmann trucks are the rounded radiator, the eight louvres installed towards the rear of the engine compartment and the external gearshift lever, here visible on the driver's side. The hardtop cab consequently had only one access door, on the assistant driver's side. This is *Wagen 1677* in service with *Etappen-Sanitäts-Kraftwagen-Abteilung der 6. Armee* (with *Sanität* standing for medical). The marking denotes that this is a truck with a recommended *Ladegewicht* of 2.5 tons and a maximum *Tragfähigkeit* of 3 tons or 18 soldiers. As Bergmann never built a 3-ton truck, this must be the 3.5-ton *Heeresmodell* built in 1914-18. The cargo bay is given as 6.5m^2 in size. Without any other surviving photographic proof of Bergmann trucks, the commercial and military models cannot be differentiated any further, and changes might have been minimal. The photo is dated on the Western Front, August 1916 Credit: Jochen Vollert Collection



A Bergmann 3.5-/4.5-ton truck in service with the ***Großherzoglich-Hessische Divisions-Kraftwagen-Kolonne der 25. Infanteriedivision*** **(divisonal column of the 25th Infantry Division of the Grand Duke of Hesse, note the crest).** Credit: Jochen Vollert Collection



A Bergmann 3.5-ton truck of a ***Bayerische Kavallerie-Kraftwagen Kolonne*** **Bavarian cavalry truck column. The photo is dated October 1915.**
Credit: Tim Gosling Collection

03.7 Braun / Braun Trucks

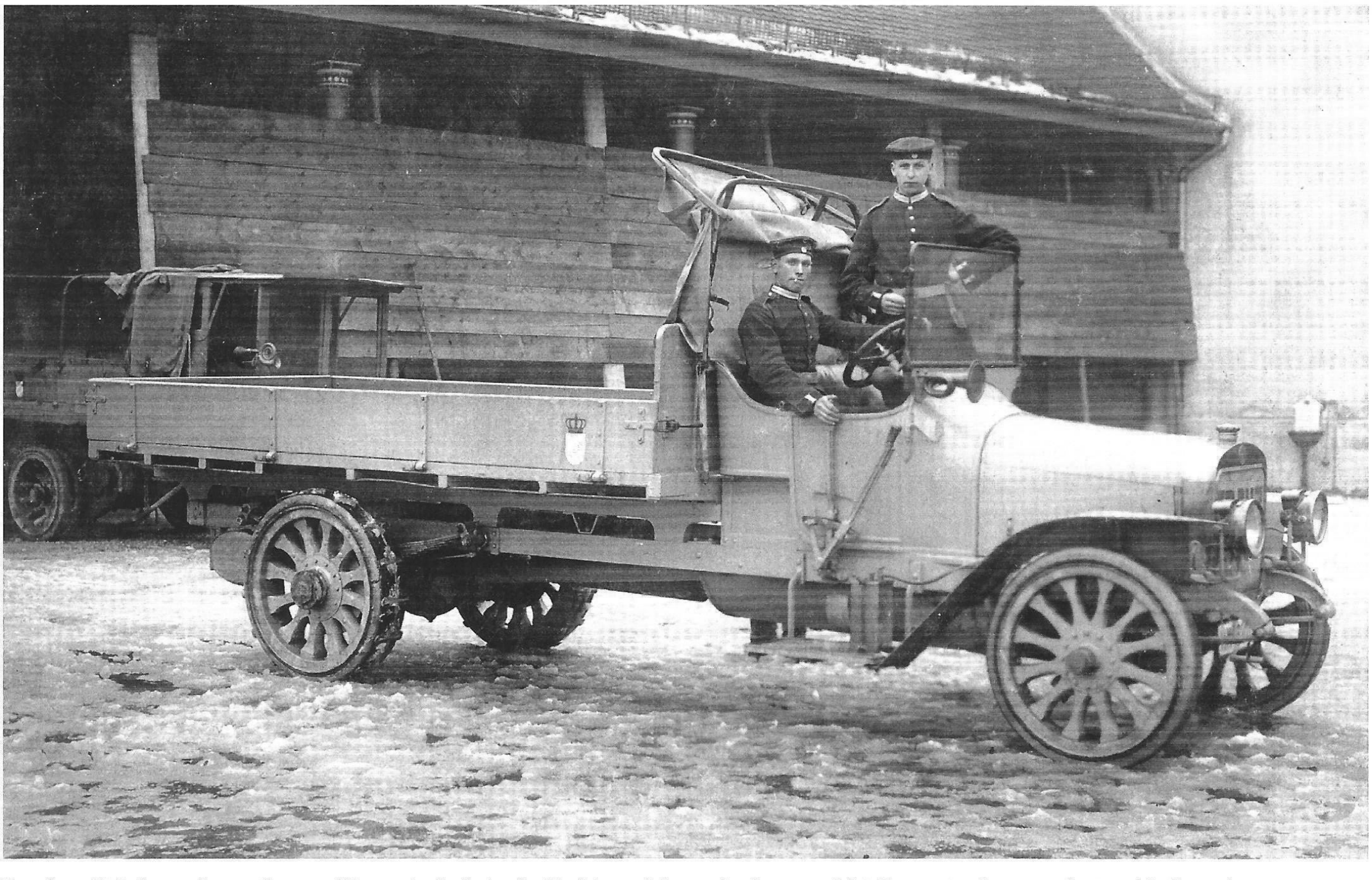
Nürnberger Feuerlöschgeräte-, Automobillastwagen- und Fahrzeugfabrik GmbH, vorm. Justus Christian Braun, was founded in 1890 in Nuremberg, and it focused on the production of firefighting equipment and steam-powered fire engines. In 1906 followed a 10-ton truck with fuel-electric drive. In 1909 the Braun company took over Nürnberger Fahrzeugfabrik Union and started to produce passenger cars and trucks. Two years later, the range comprised electric trucks, combustion engine vehicles, passenger cars, fire engines and municipal vehicles. After internal disputes among the owners, the company was dissolved in 1913.

A little later, Karl Schmidt, the owner of Nürnberger Wagenbau- und Radfabrik Karl Schmidt, took over the production plant and continued to manufacture Braun-designed trucks. Among these was a *Regel-Dreitonner* 3-ton standardised truck predominantly for the Royal Bavarian Army. Commercial vehicles were offered in the 2.5-ton, 3.5-ton and 4.5-ton payload classes. The monthly output reached 30 vehicles. As of 1914, two types remained in production:

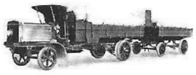
°	3.5-ton	*Regel-Dreitonner*	powered by a 4-cylinder 38hp 6228cc engine
°	4.5-ton		powered by a 4-cylinder 45hp 6337cc engine

Total production of Braun trucks under Karl Schmidt from 1915-18 was 990 vehicles.

In 1918 the company Nürnberger Wagenbau- und Radfabrik Karl Schmidt amalgamated with Fahrzeugfabrik Ansbach AG, located nearby, to become Fahrzeugfabrik-Ansbach-Nürnberg (FAUN). FAUN started building 2.5-ton and 3.5-ton trucks for the army in the last months of that year. Almost nothing is known about that era.



Despite a little fewer than a thousand Braun tucks being built, this model remained a rare sight. Braun trucks, manufactured in Bavaria, were predominantly delivered to the Bavarian Army. The example in the photo shows the Bavarian crest marking, external gearshift levers, a flatbed cargo bay, a folding cab roof and ice grousers on the single rear wheels. The Braun truck was the only *Heeresmodell* not fitted with double rear wheels. This photo is dated March 1915. Credit: Jochen Vollert Collection



03.8 Büssing / Büssing Trucks

At around the turn of the century, Heinrich Büssing, based on his previous experience producing bicycles and later signalling systems for railroads, built his first motor vehicle, a bus. To focus on the then brand new branch of motor vehicle production, Heinrich and his sons Ernst and Max launched their endeavour in 1903 by founding Heinrich Büssing, Specialfabrik für Motorlastwagen, Motoromnibusse und Motoren (specialised factory for trucks, buses and engines) in Braunschweig (Brunswick). In the same year, the first vehicle, a 2.5-ton truck with a 2-cylinder 9hp engine, saw the light of day. This event was the start of a German truck-building legend that would continue far into the second half of the 20th century. The first 2.5-ton model was soon followed by a series of 3-ton to 6-ton trucks from 1904-10, mostly with 4-cylinder engines and power outputs ranging from 20hp to 60hp.

As early as 1907, Büssing provided a commercial 3-ton truck for trials during the annual *Kaiserliches Herbstmanöver* (Imperial autumn exercise). In 1908 the company followed the invitation-to-tender by the Prussian and Bavarian governments to build subsidy trucks for military applications. What followed was the design of 3.5-ton and 4.5-ton trucks of *Kriegsbrauchbare Armeelastzüge* (military-grade truck-trailer combinations) that were used in connection with 2-ton trailers and had power outputs of 35hp, 38hp or 40hp respectively. Six of these *Armeelastzüge* were ordered by the *Heeresverwaltung* (Army Administration) for army trials. There was also an order for a fuel-electric prototype truck that was fulfilled. Out of the 166 *Subventionslastzüge* purchased by civilian companies that year, 50 buyers opted for the Büssing 3.5-ton or 4.5-ton model with 35hp or 40hp engines respectively.

To comply with military demands, army trucks were from the start equipped with additional coil springs on the leaf-spring suspension to better absorb the wear and tear of bad roads in connection with solid rubber-rimmed, wood-rimmed or steel-rimmed tyres. In addition, the ground clearance was increased from 280mm on commercial models to 350mm on military models. A first series of eight such trucks participated in the *Vergleichsfahrten* comparative army trials.

To comply with the Bavarian Army's demand for local manufacture of military trucks, Büssing in 1909 committed to licenced production of its models at the Waggonfabrik Joseph Rathgeber AG near Munich.

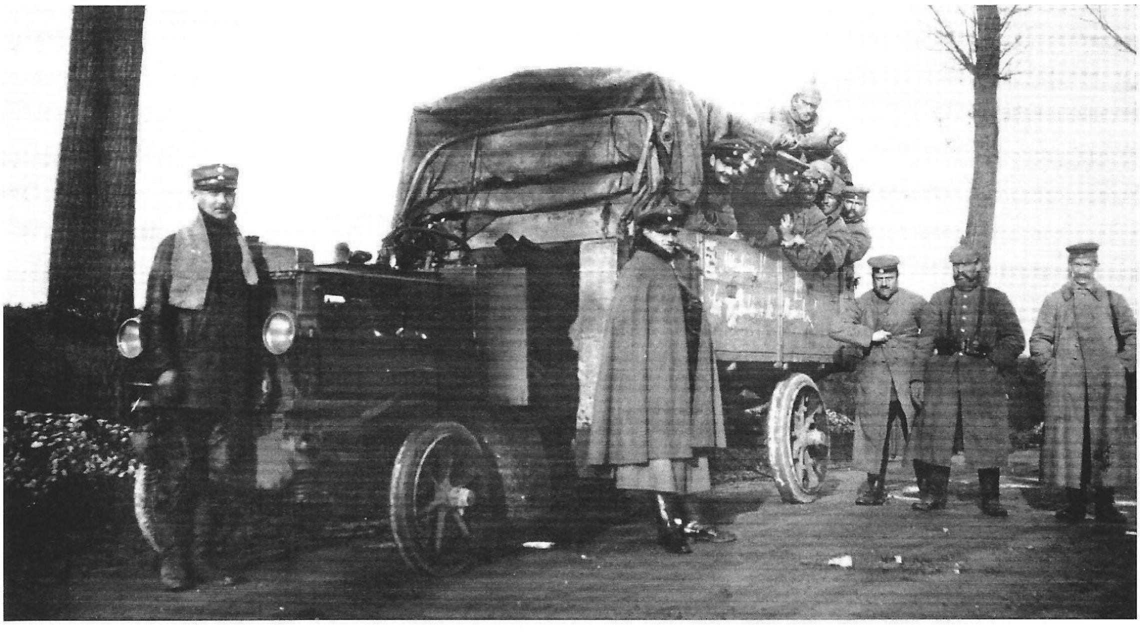
From 1912, as part of a general standardisation effort with the company's range of vehicles, Büssing started offering the commercial

°	Typ II	2.5-ton	powered by a 4-cylinder 25hp 4082cc engine
°	Typ III	3.5-ton	powered by a 4-cylinder 32hp 5813cc engine
°	Typ IV	4-ton	powered by a 4-cylinder 35hp 5813cc engine
°	Typ V	5-ton	powered by a 4-cylinder 40hp 6898cc engine.

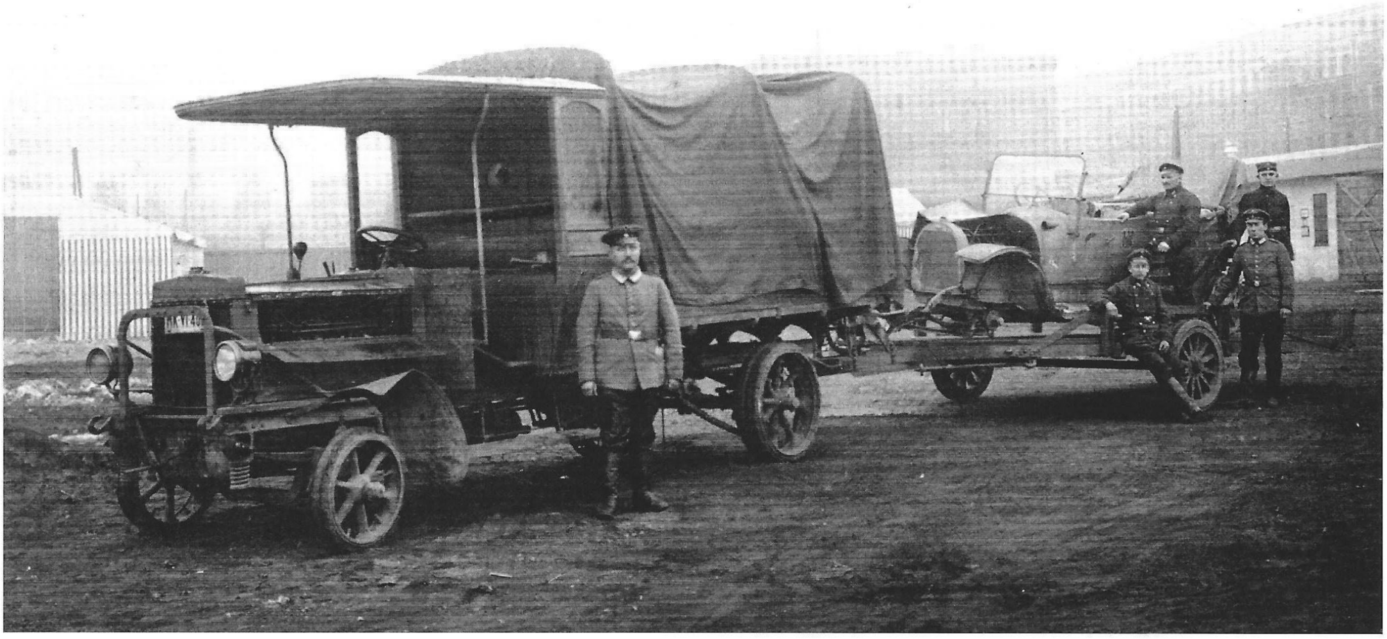
The focus on *Subventionstyp* subsidy truck specifications (as outlined by the military that year and based on Büssing's 1911 trial model) allowed Büssing to further melt down its range of over 200 different models to a much more streamlined range in 1913.

During the war, Büssing focused on production of the *Typ III, Typ IV* and, to a lesser degree, *Typ V* trucks, and manufactured them in various guises such as cargo, workshop, telegraph, field laundry and meat transport bodies for the army. A particularly interesting variant was the 38/40hp Büssing *Schienen-LKW* railroad truck. *Typ III/IV* trucks became a common sight within the Imperial German Army. For the duration of the war, details of the design were more and more simplified, mostly because of shortages in raw materials but also with the intention to shorten production time per unit to maintain output figures.

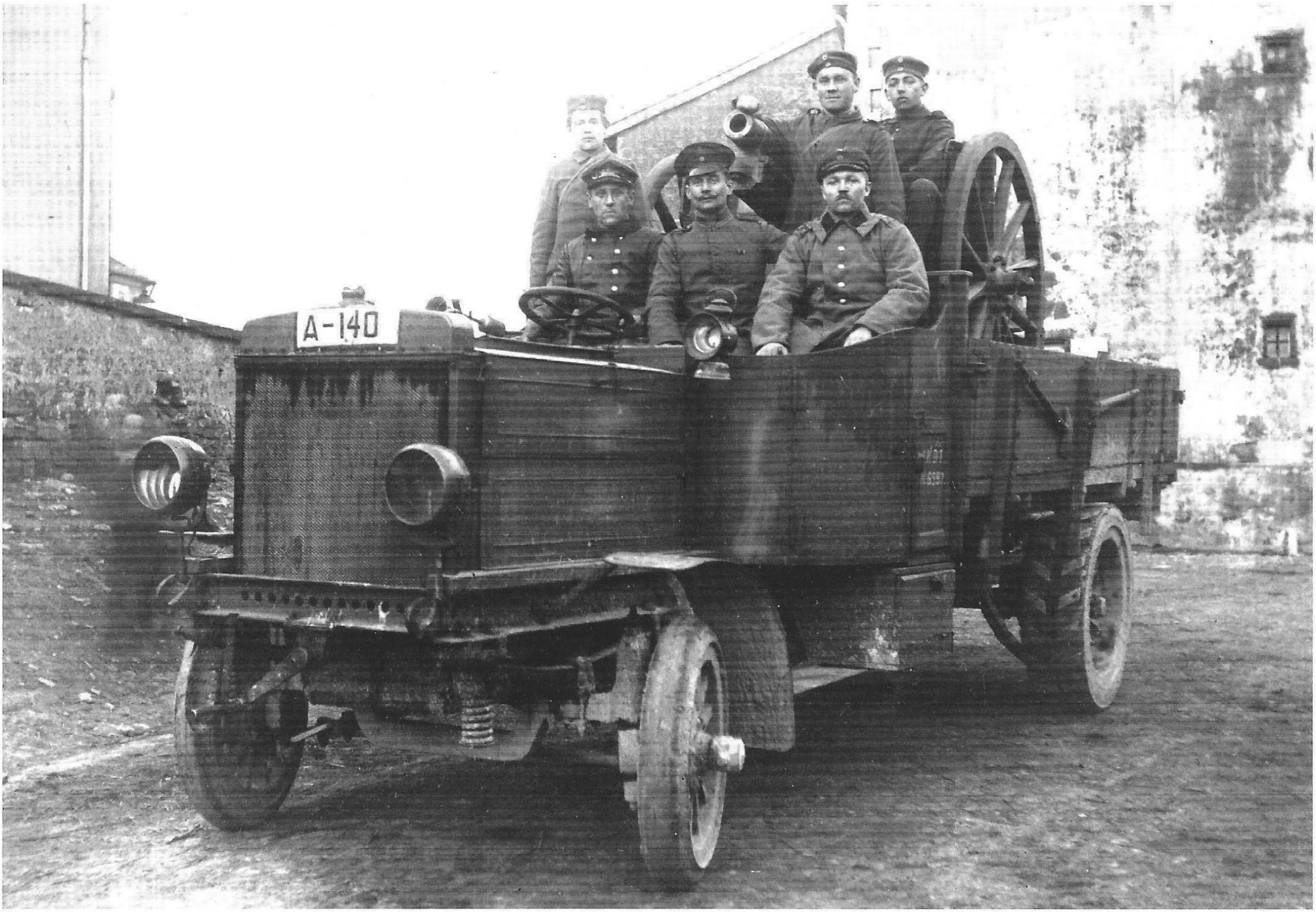
The monthly output from 1914-18 was given at an average of 60-90 vehicles of all types, including trucks for the civilian market and special designs such as *Kraftzugwagen* artillery prime movers and *Munitionsschlepper* ammunition carriers, altogether about 3,000 vehicles. Adding to these were impressed pre-war vehicles bringing the figure closer to 4,000.



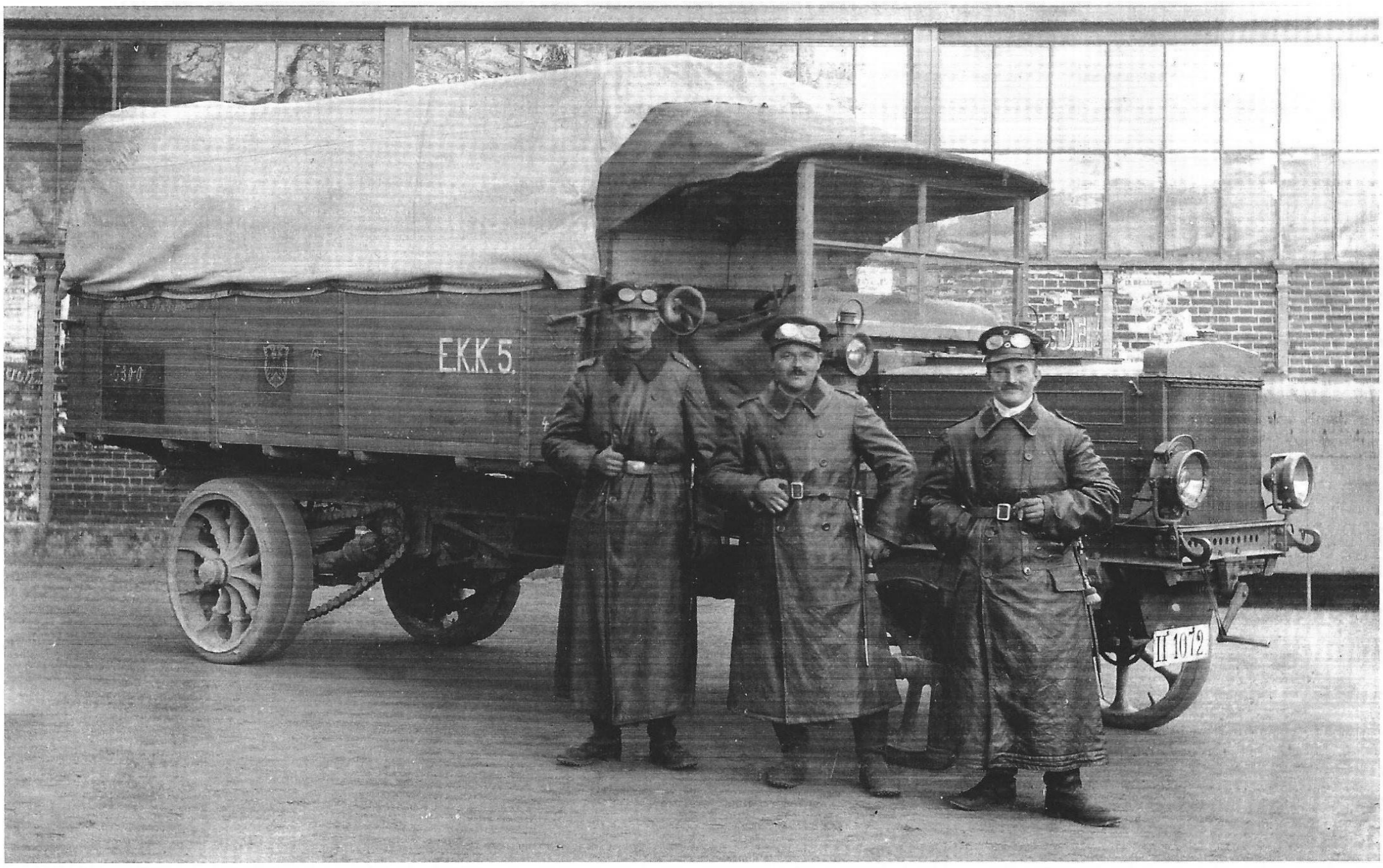
The smallest of the Büssing *Typ* truck family impressed into army service was the 2.5-ton *Typ II* that can be identified by the single rear wheels.
Credit: Tim Gosling Collection



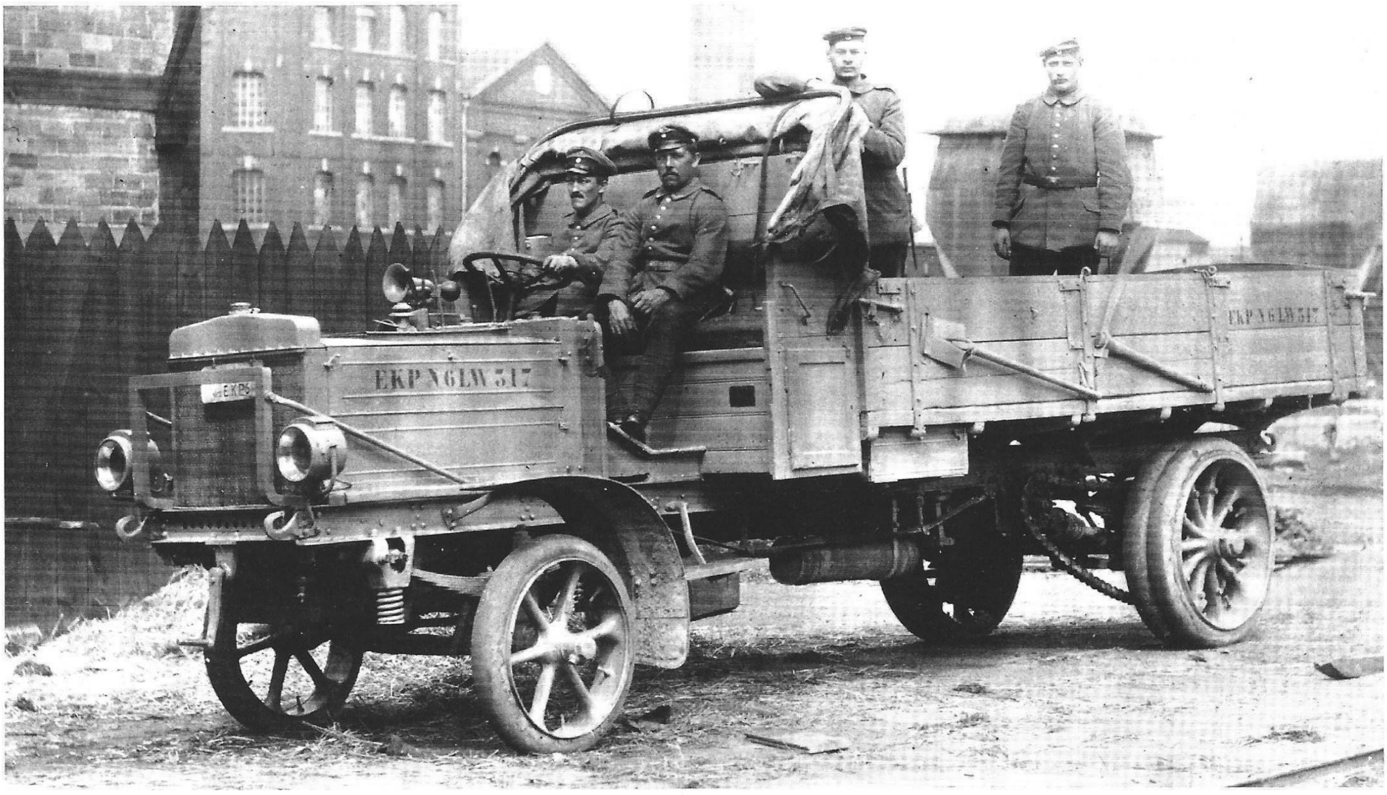
From 1912, Büssing standardised production by focussing on *Typ II, Typ III, Typ IV* and *Typ V* trucks. These were commercial vehicles that already met basic army requirements based on the 1907-11 comparative test drives and the 1908 *Subventionswagen*. The commercial types usually had soft-top foldable cab roofs or unusual designs such as the overlong hardtop on this example, presumably a *Typ III* 3.5-ton vehicle impressed into army service. The *MK VI* licence plate places the unit in the *Reichsgebiet* German homeland, in the district of Breslau. Credit: Jochen Vollert Collection



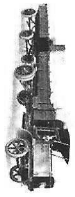
From 1914 the Imperial German Army began to impress civilian vehicles into its transport columns, and Büssing trucks, such as the commercial example shown here, were among the preferred types. Note on this improvised artillery transport that the rear tyres have been fitted with an anti-slip tread pattern. A nice detail are the supports on the cargo bay sides that extend to the ground when folded out, thus providing a working but no firing platform. The 'A' licence plate denotes *Armee-Abteilung A*. Credit: Jochen Vollert Collection

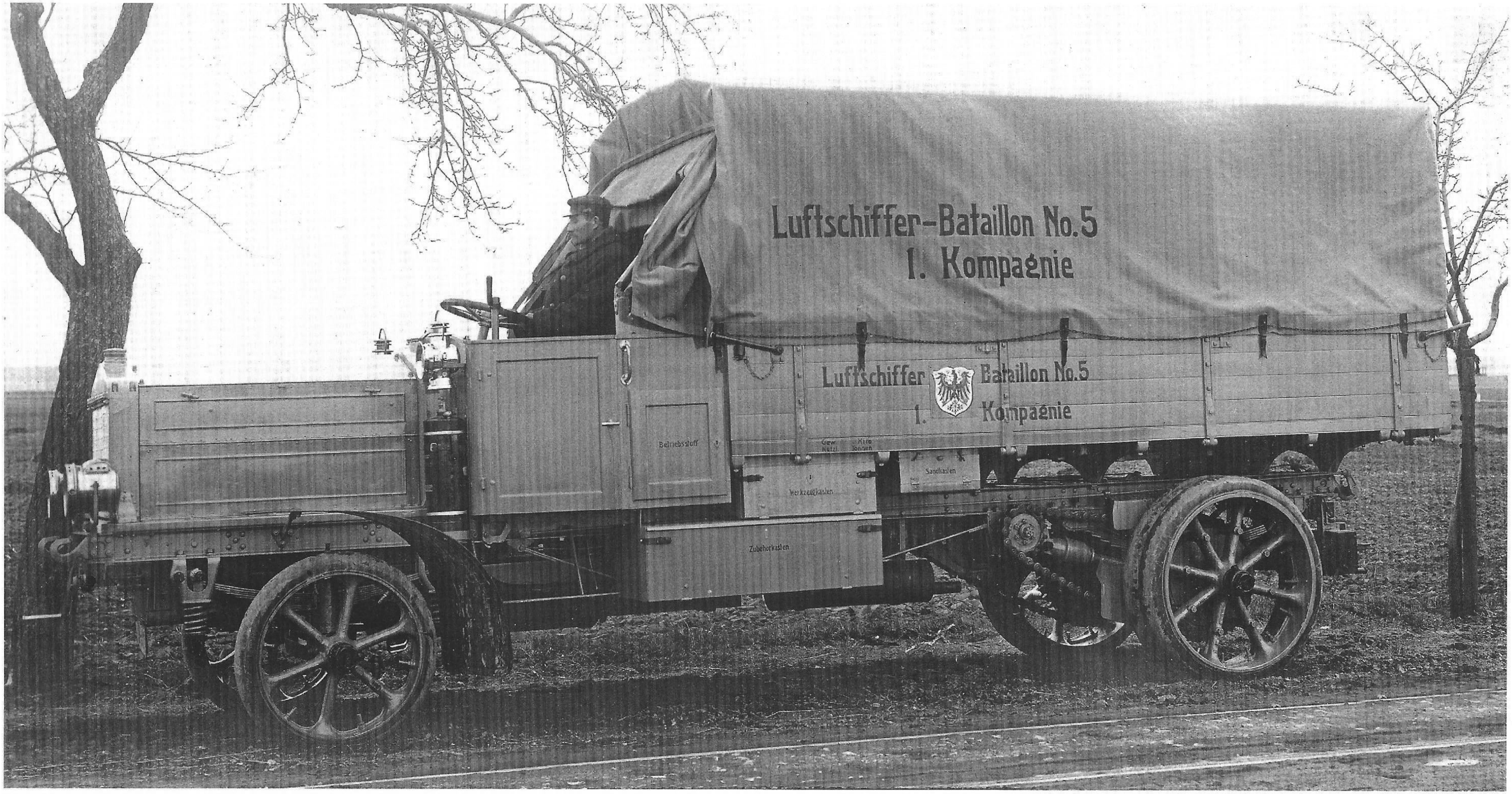


All commercial Büssing trucks of the pre-war period can be identified by the civilian radiator with external mounting bolts on the upper edge, in combination with a flat bonnet and a foldable soft-top cab roof. In addition, these trucks did not have a military-grade radiator guard fitted. The vehicle in this photo is a *Typ IV* with 4-ton payload and 35hp engine. It is in service with *Etappen-Kraftwagen-Kolonne 5* (rear communications area motor vehicle column) of the 2nd Army (see the '*II*' licence plate). Note the improvised windscreen, the typical Büssing headlight near the windscreen and also the chain drive on the rear axle. The photo is dated April 1915. Credit: Jochen Vollert Collection

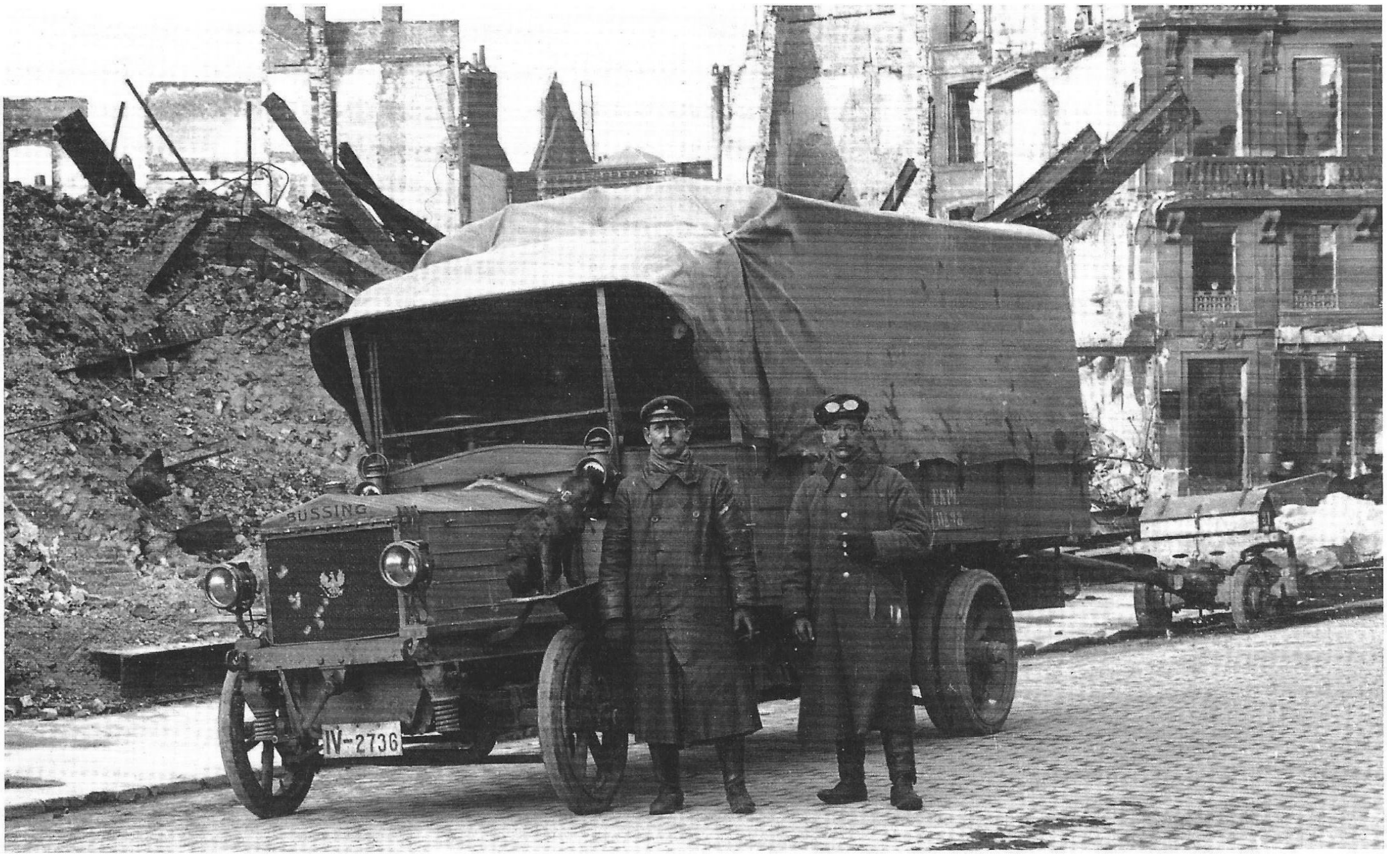


Another pre-war Büssing bearing the civilian radiator and flat bonnet. This example has been partially militarised with a brush guard for the radiator, as well as pioneer tools. The marking '*EKP N 6 LW 317*' remains somewhat of a mystery apart from *Etappen-Kraftwagen-Park 6*.
Credit: Jochen Vollert Collection

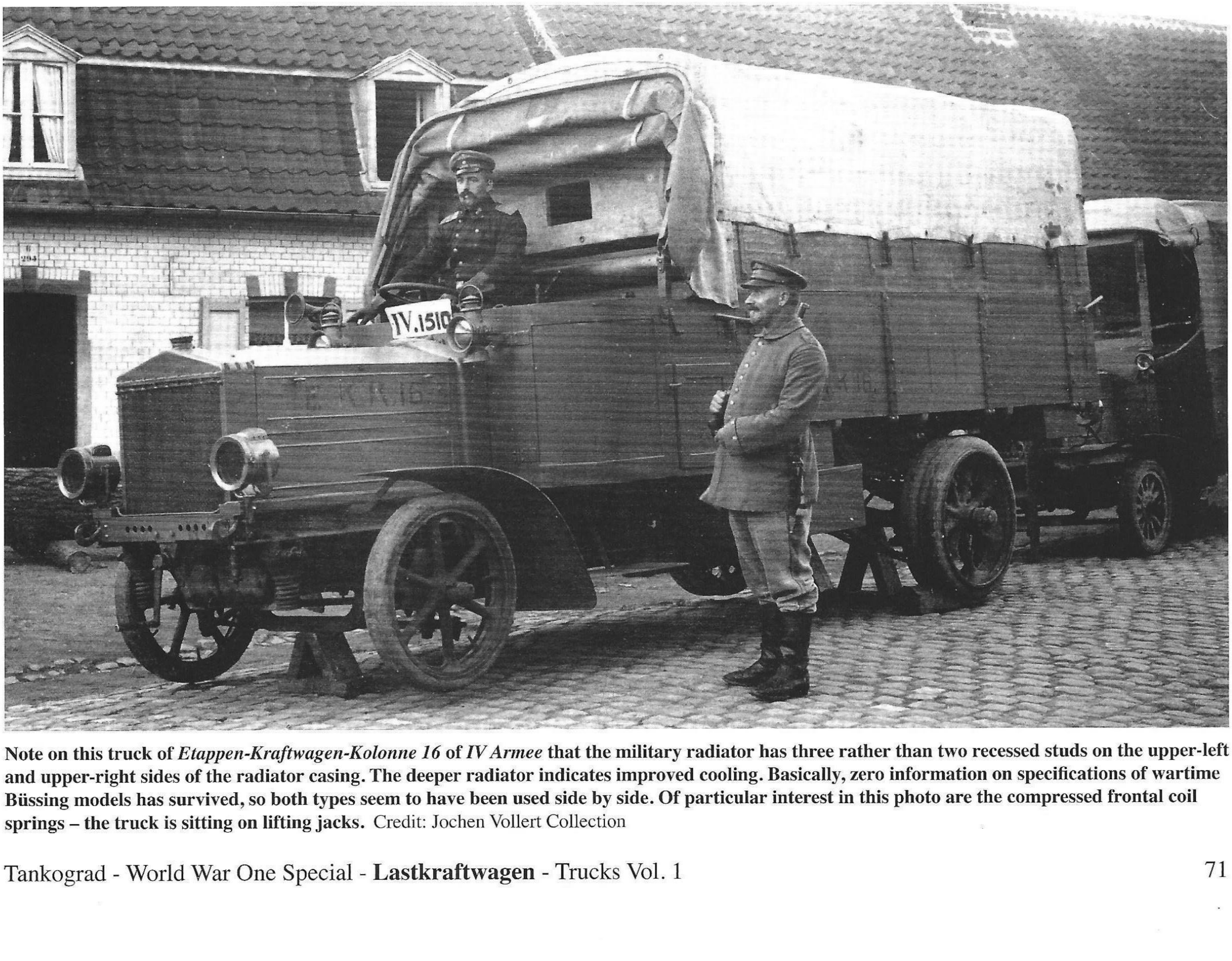



Luftschiffer-Bataillon No.5
I. Kompagnie
Luftschiffer Bataillon No.5
I. Kompagnie
Betriebsstoff
Werkzeugkasten
Sandkasten
Zubehörkasten

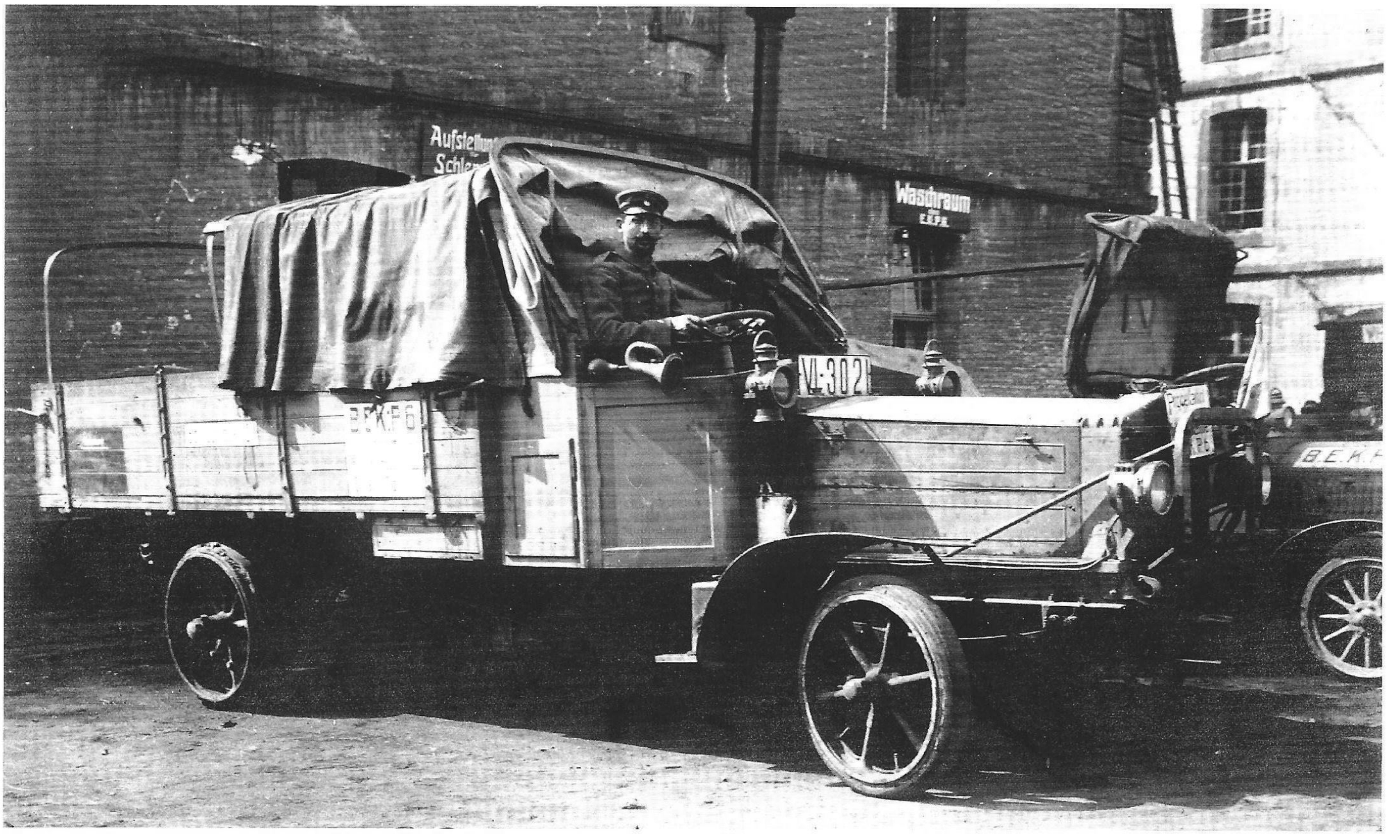
This is the classic Büssing 1914 *Typ III/IV/V* truck used in the *Armeelastzug* as well as in the solo truck role. It still features the flat pre-war bonnet and soft-top cab. The radiator is now of military type with recessed studs on the upper radiator casing. No brush guard is fitted, and the engine compartment side covers still feature embossed rectangular sections on both the upper and lower parts. The truck belongs to *I. Kompagnie* (1st Company) of *Luftschiffer-Bataillon 5* (5th Airship Battalion) of the Prussian Army. Note that the stowage boxes have been properly labelled with *Betriebsstoff* (fuel), *Werkzeugkasten* (toolbox), *Zubehörkasten* (equipment box) and *Sandkasten* (sand box). Sadly, the *Nutzlast* (payload rating) on the side of the cargo bay floor has been left empty. Note the cylindrical gas generator for the upper headlights fitted just in front of the co-driver's door. The photo is dated 1914. Credit: Jochen Vollert Collection



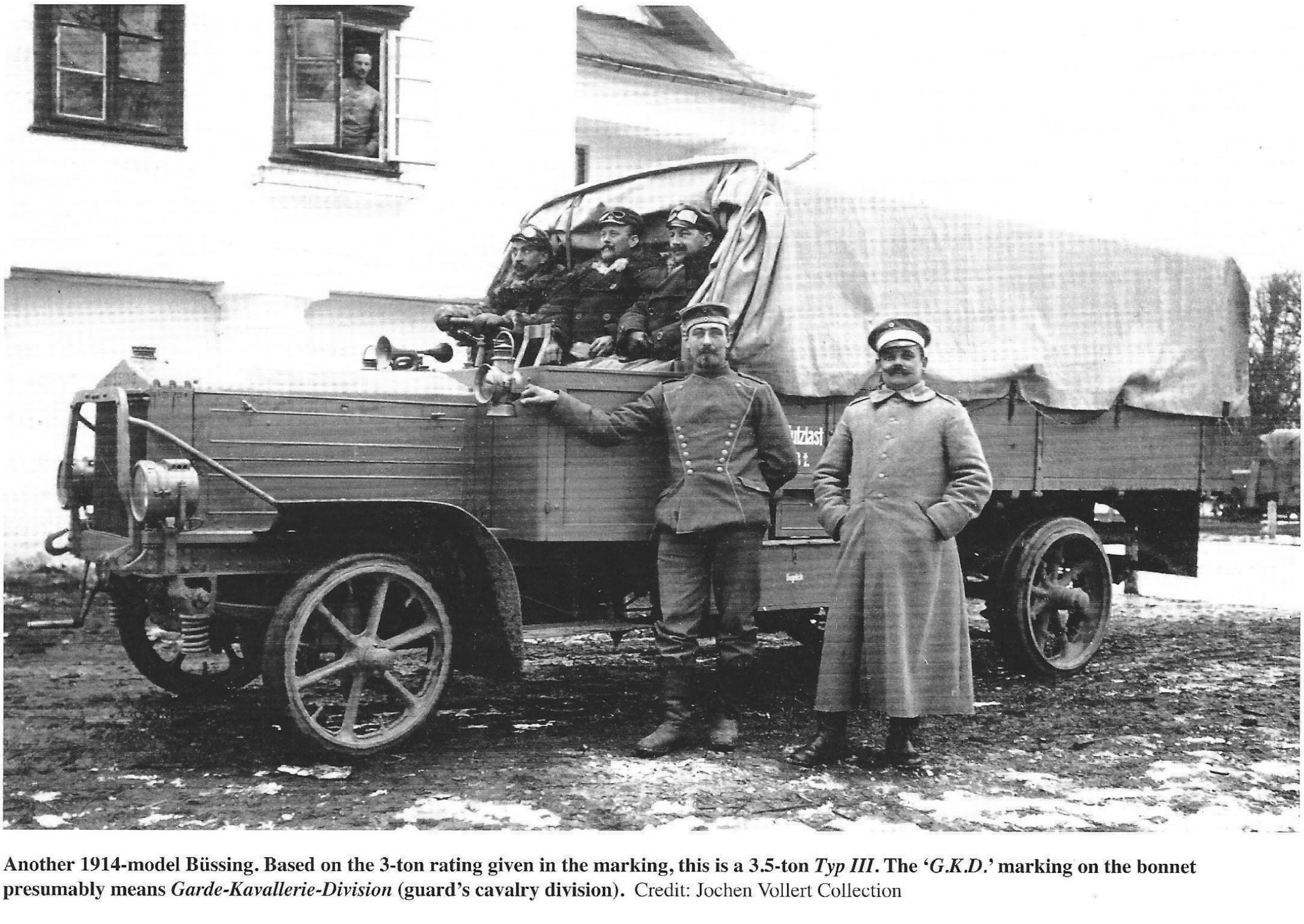
Another 1914 army-model Büssing, this time in service with *IV Armee* and with the soft-top cab and cargo bay tarpaulin fitted. Note the additional coil springs mounted next to the leaf-spring suspension, a typical feature of all *Typ* trucks by Büssing. The coil spring, or 'helper spring' , holds the leaf-spring in place when the truck receives a sudden jolt when it hits a rough part of the road. Credit: Jochen Vollert Collection



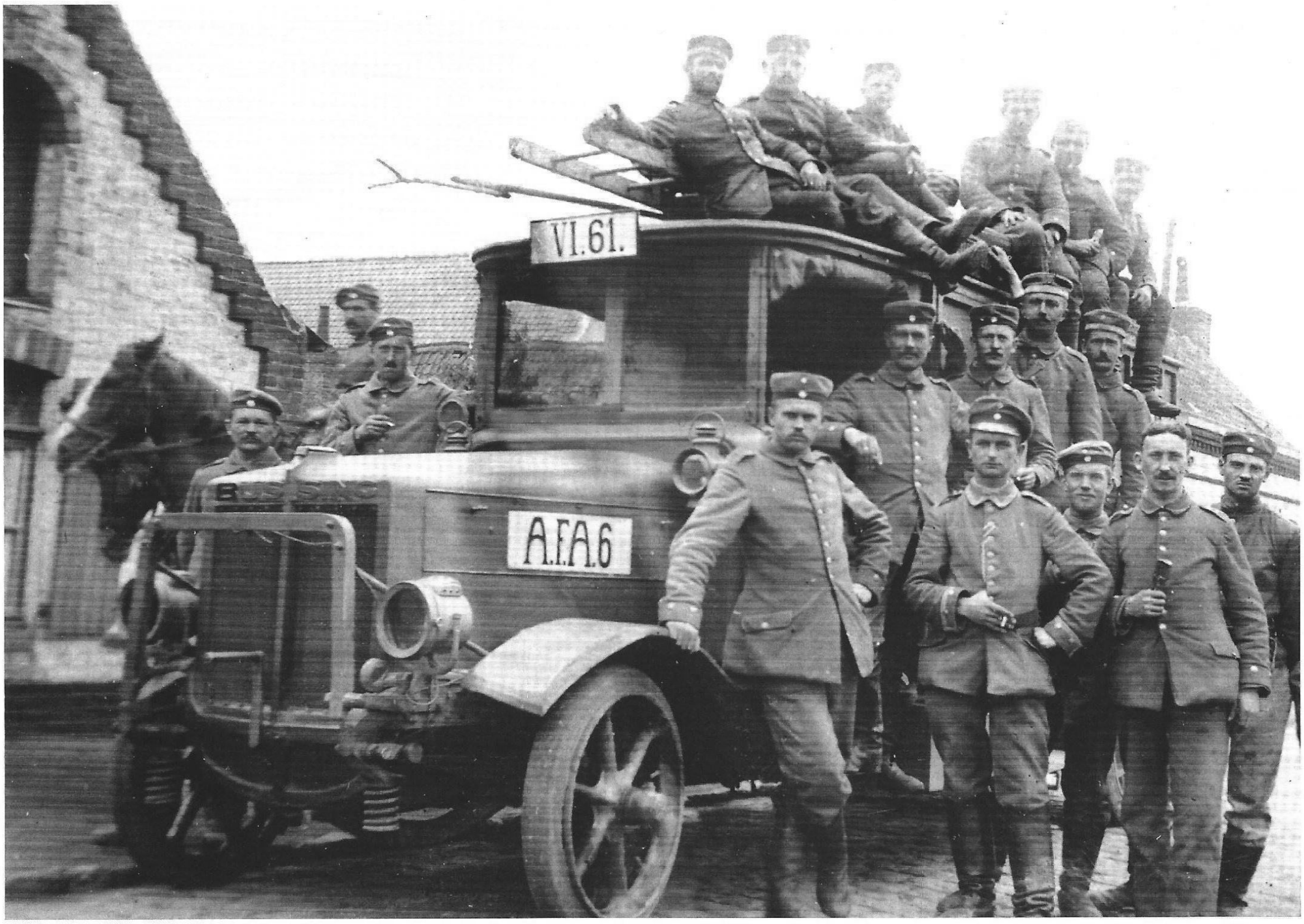
Note on this truck of *Etappen-Kraftwagen-Kolonne 16* of *IV Armee* that the military radiator has three rather than two recessed studs on the upper-left and upper-right sides of the radiator casing. The deeper radiator indicates improved cooling. Basically, zero information on specifications of wartime Büssing models has survived, so both types seem to have been used side by side. Of particular interest in this photo are the compressed frontal coil springs – the truck is sitting on lifting jacks. Credit: Jochen Vollert Collection



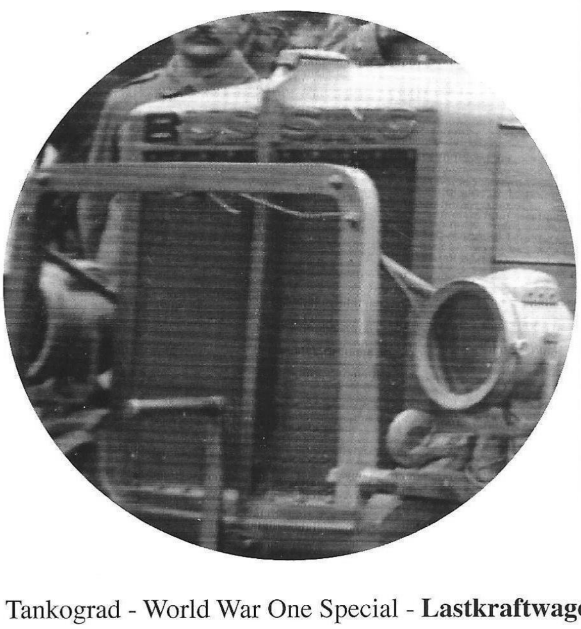
One more 1914-model Büssing *Typ III/IV/V* with the deeper radiator and in service with *Bayerischer Etappen-Kraftwagen-Park 6* (6th Bavarian Rear-Communications Area Motor Park). Note the *Probefahrt* (test drive) placard behind the refitted radiator brush guard. The photo is dated November 1915. Credit: Jochen Vollert Collection

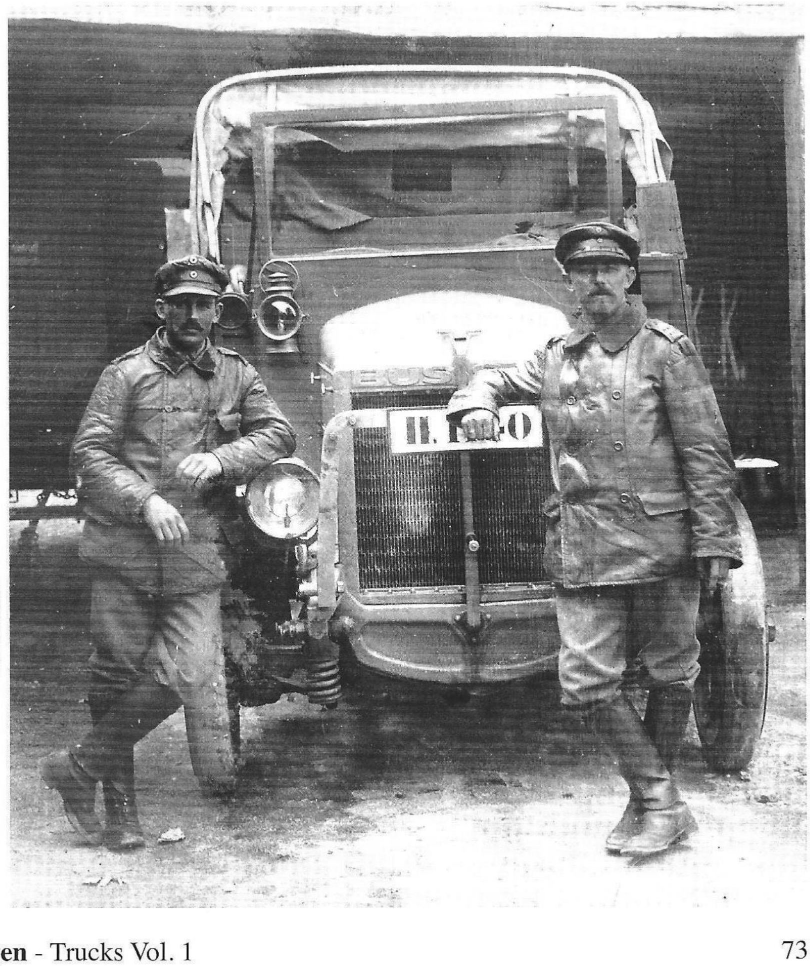


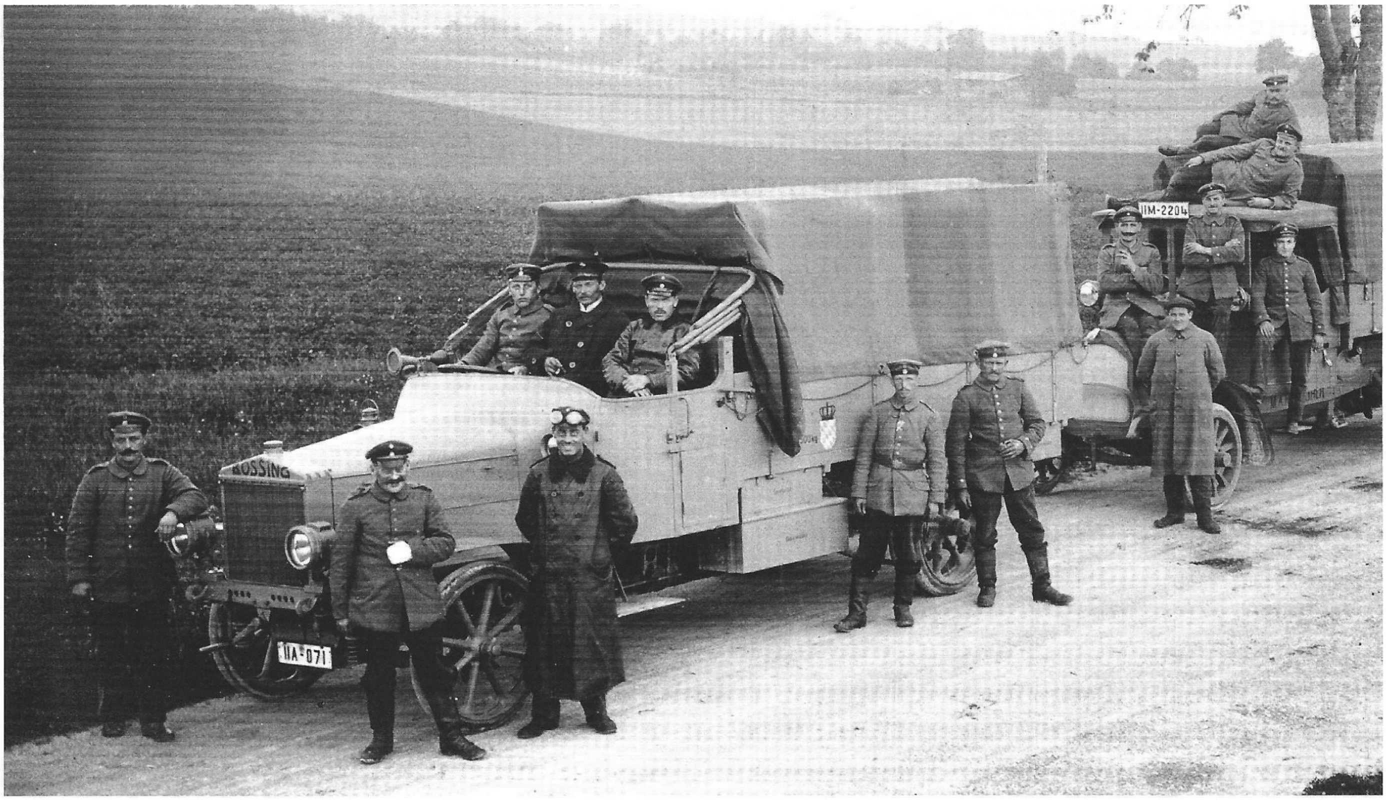
Another 1914-model Büssing. Based on the 3-ton rating given in the marking, this is a 3.5-ton *Typ III*. The '*G.K.D.*' marking on the bonnet presumably means *Garde-Kavallerie-Division* (guard's cavalry division). Credit: Jochen Vollert Collection



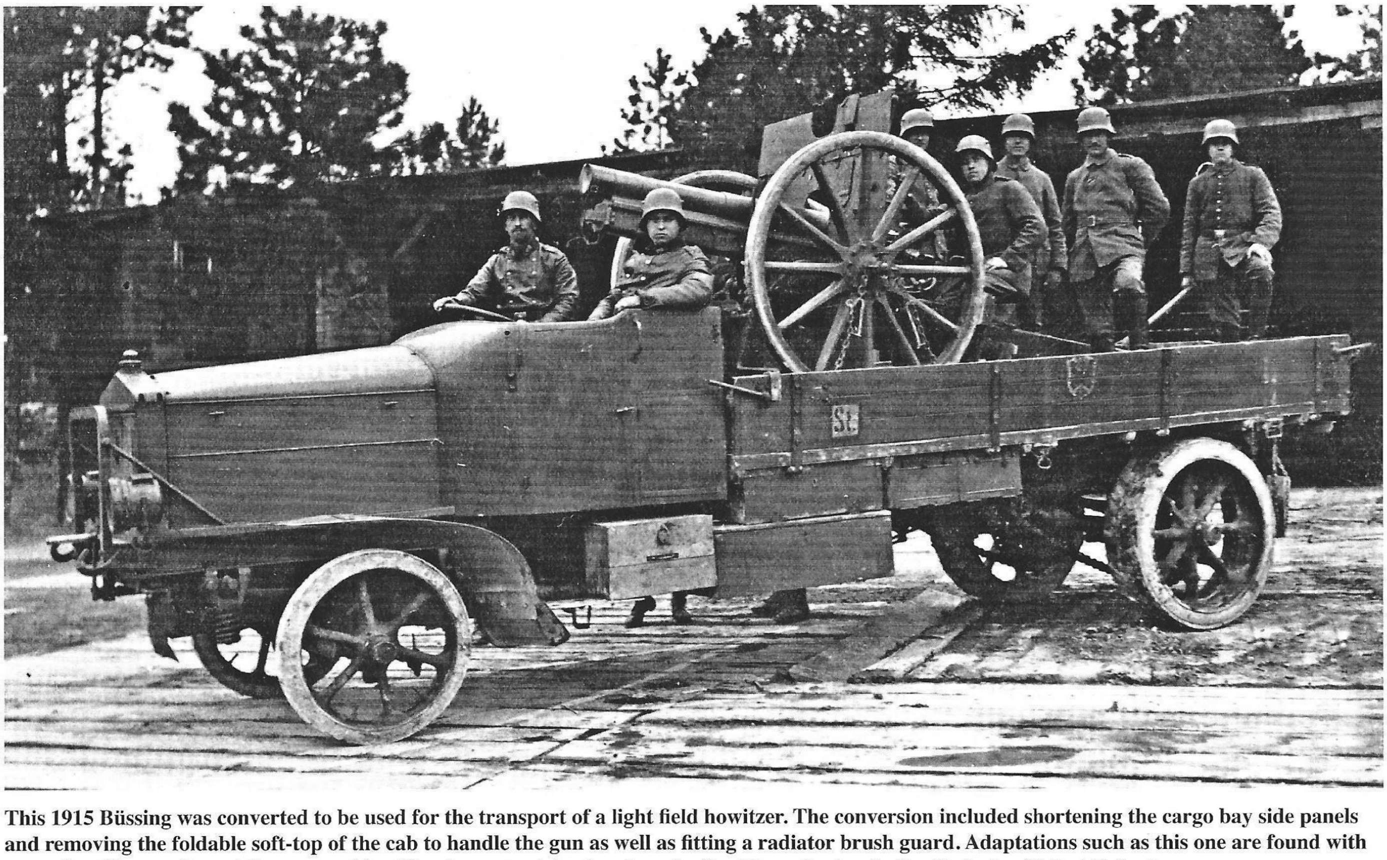
Büssing carried on producing trucks for commercial purposes during the war to only a very limited scale. Some of these civilian types also found their way into army service. They can be identified by the civilian radiator design with a flat upper end (rather than the triangular upper end on military radiators) and the Büssing logo on the radiator top made of wide typeface cast letters, rather than being painted onto military trucks. Additionally, the radiator featured a centrally fitted protective "fork". Albeit not of the best quality, these two rare photos show such impressed types. This type of radiator was used from 1913-16 Credit: Jochen Vollert Collection



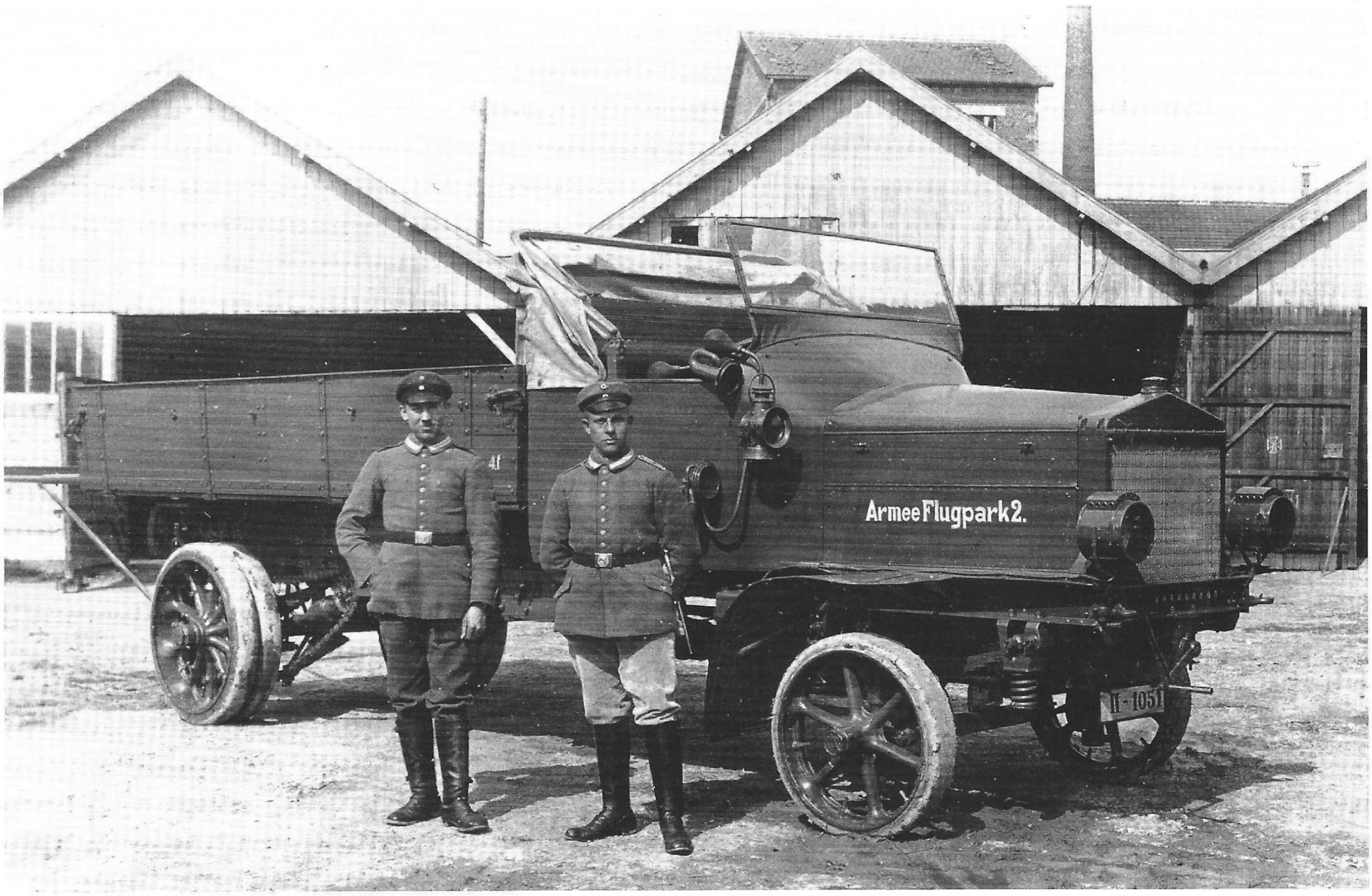




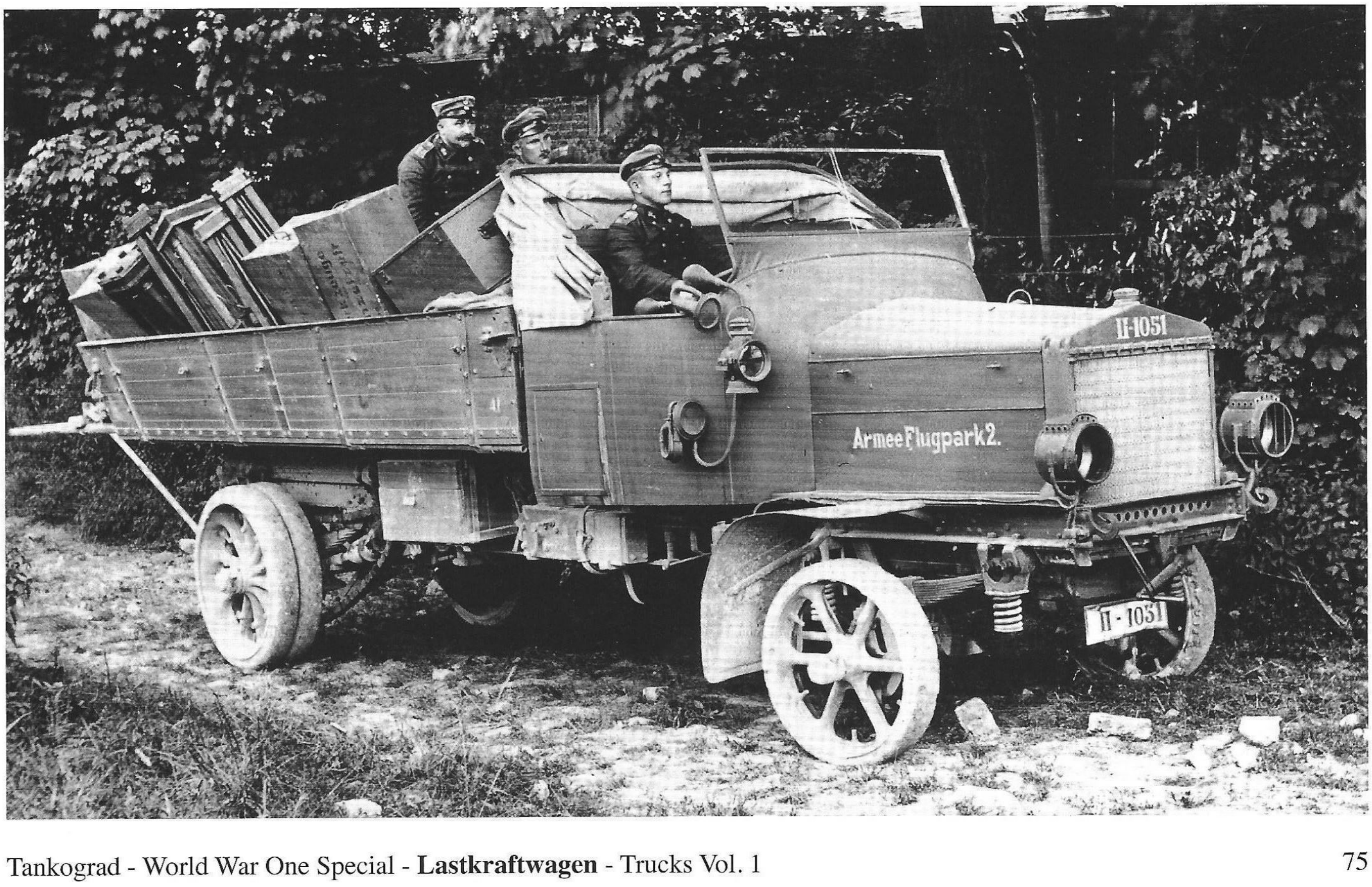
From about 1915, Büssing adapted its primary *Typ III/IV/V* trucks to a more simplified design. The most prominent design change was that the flat bonnet now tilted forward, and the boxy cab front was replaced by a rounded type. The classic pre-war art nouveau style had made room for wartime simplification. This is best appreciated by the new two-part folding side panels of the engine compartment: the embossed rectangular sections are gone now. At this date, the soft-top was still the standard option for the cab. Another typical feature of early-war versions was the brush guard of the radiator not yet being fitted from the production line. Note the hand-painted Büssing name on the radiator. This *Typ III* truck served with the Bavarian Army, as is denoted by the blue-white crest on the side of the cargo compartment. Note also the marking indicating a payload rating of *3500kg* next to it. The MAN-Saurer truck in the background features the correct Bavarian licence plate starting with '*IIM*' yet the Büssing still has, for unknown reasons, the civilian '*IIA*' licenceplate of the city of *München* (Munich). Credit: Jochen Vollert Collection

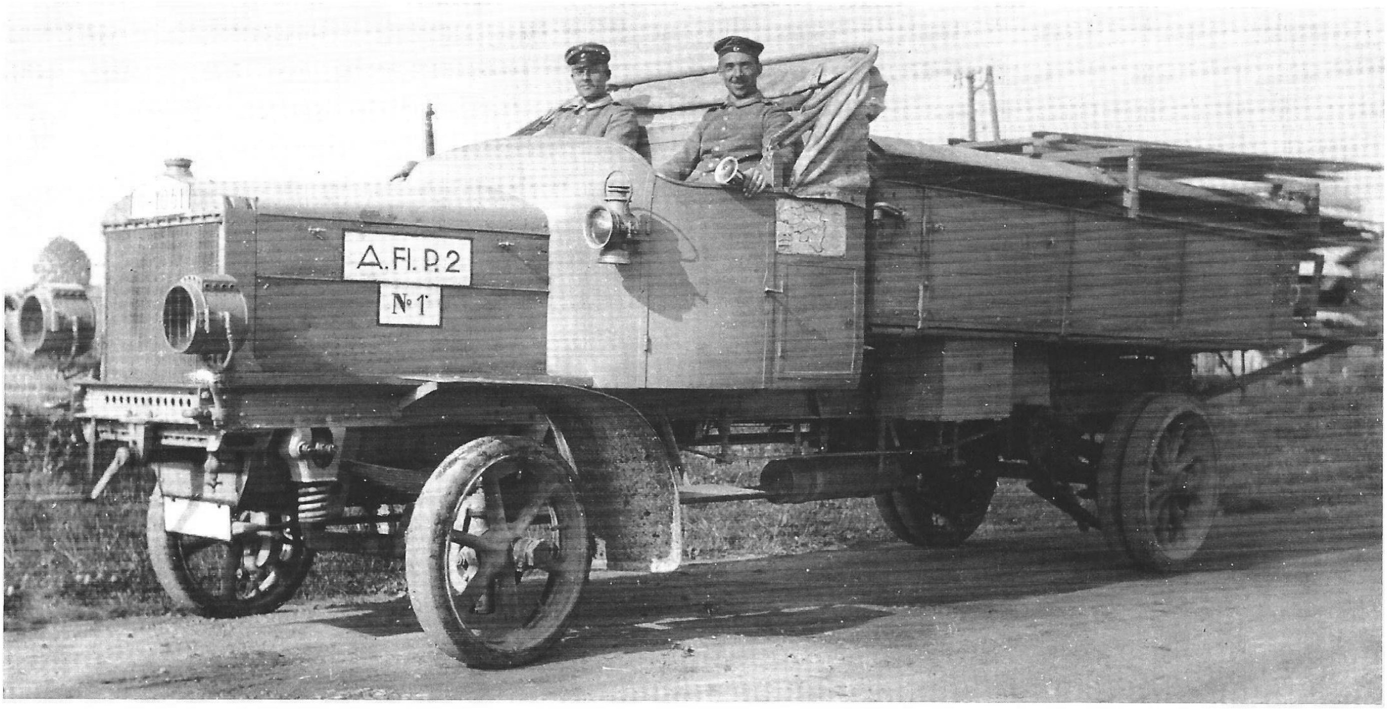


This 1915 Büssing was converted to be used for the transport of a light field howitzer. The conversion included shortening the cargo bay side panels and removing the foldable soft-top of the cab to handle the gun as well as fitting a radiator brush guard. Adaptations such as this one are found with several artillery units, yet the gun could neither be accurately aimed nor be fired from the truck. Credit: Jochen Vollert Collection

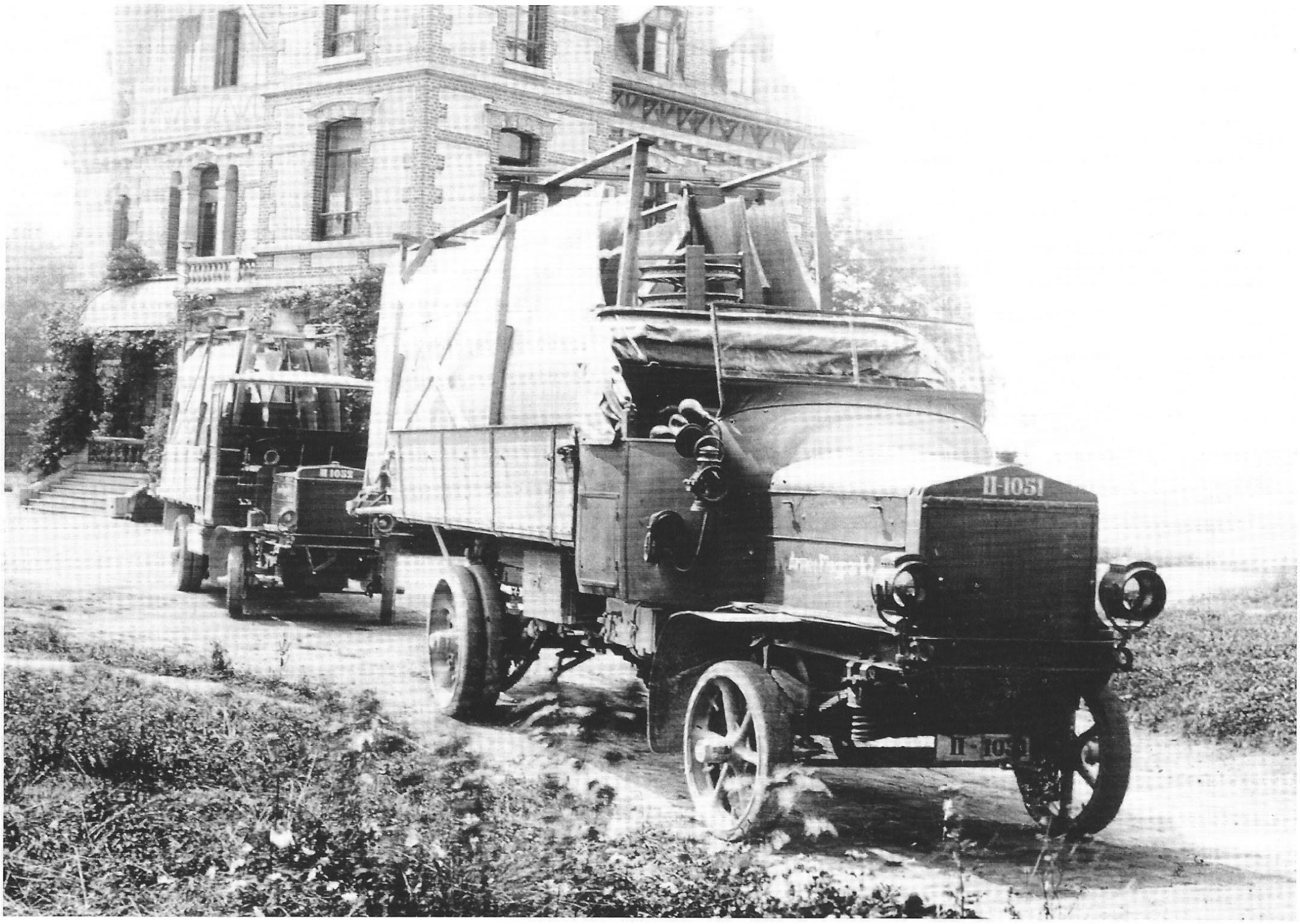


Two photos of the same truck during different periods of its service life. '*II-1051*' belongs to *Armee-Flugpark 2* (Army Air Corps Park) of the 2nd Army. In the photo above, the 1915 *Typ IV* truck displays all the features of that production year: a military radiator, soft-top cab, simplified engine compartment side covers, absent radiator brush guard, brand new paint job and four headlights. Note that a windscreen was fitted. In the photo below, the years of wartime service have already taken their toll. The paint job is faded and dirty, and the licence plate is now repeated on the radiator front. The 4-ton payload rating is still visible in both photos. Particularly well visible are the additional coil springs on the front axle. Note also the two horns. Credit: Jochen Vollert Collection

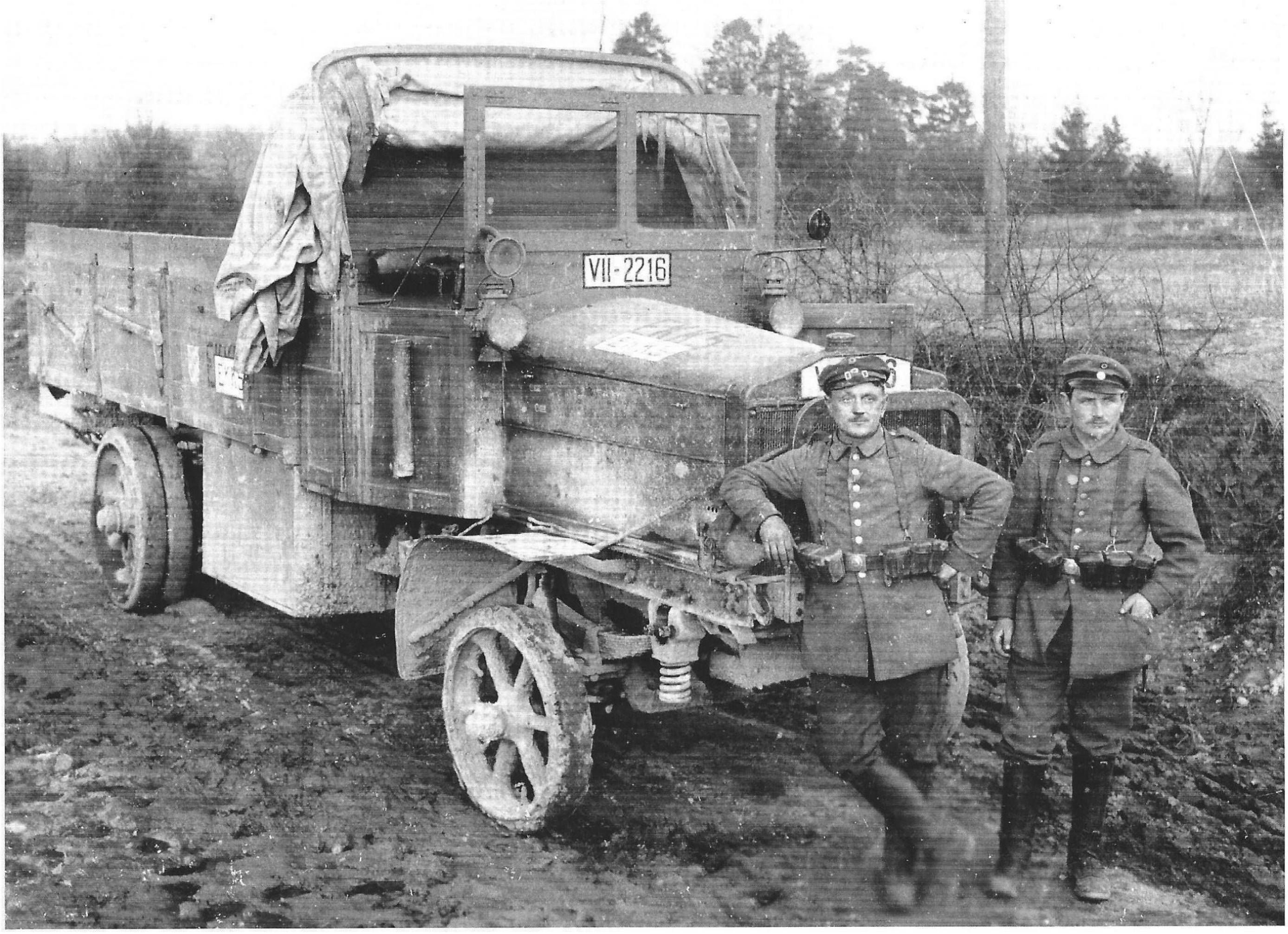




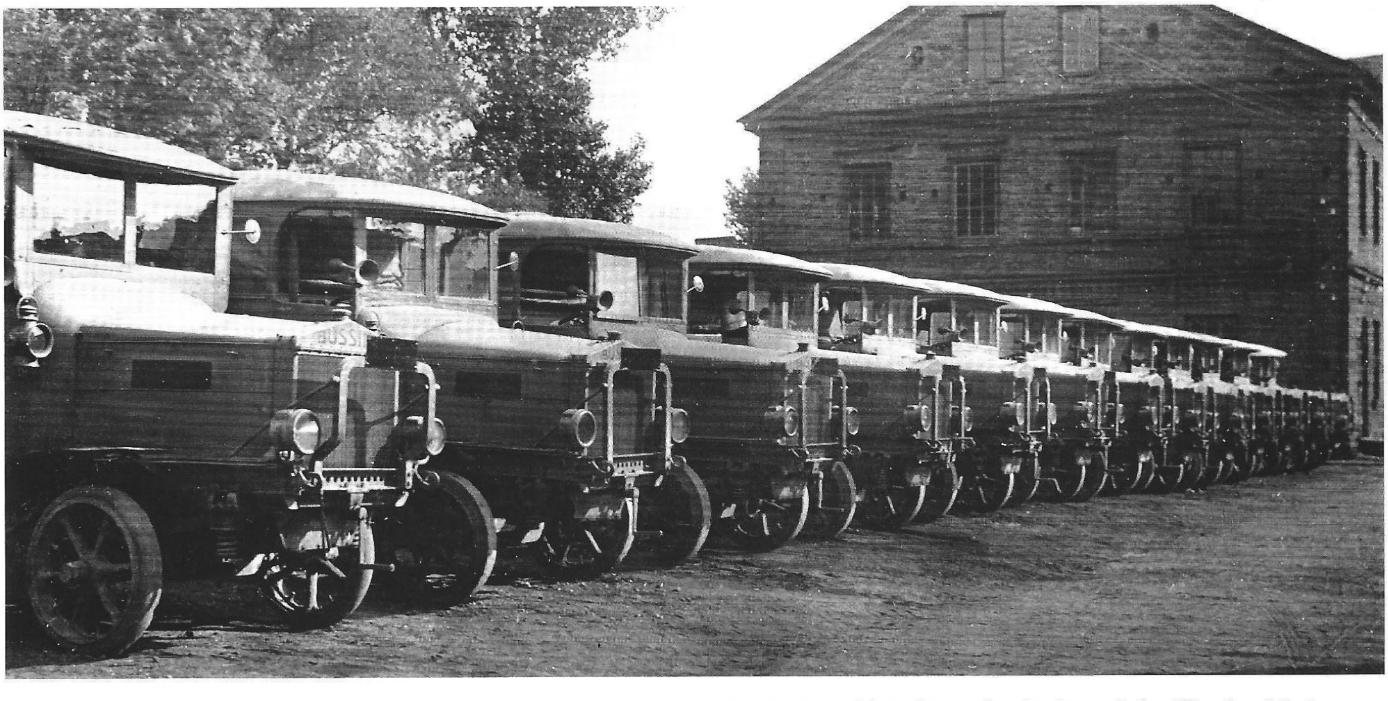
Another nice study of the same 1915 *Typ IV* model with the revised cab design, yet still with a soft-top. The marking '*A. Fl. P. 2 No. 1*' once more denotes *Armee-Flugpark 2*, this time truck no. 1. A closer look reveals a road map of occupied northern France painted next to the cab door. Observe the frontal crossmember under the radiator: it has twelve drilled holes. Other Büssing trucks of the same manufacturing period have eight or nine, a riddle that is still unsolved. Credit: Jochen Vollert Collection



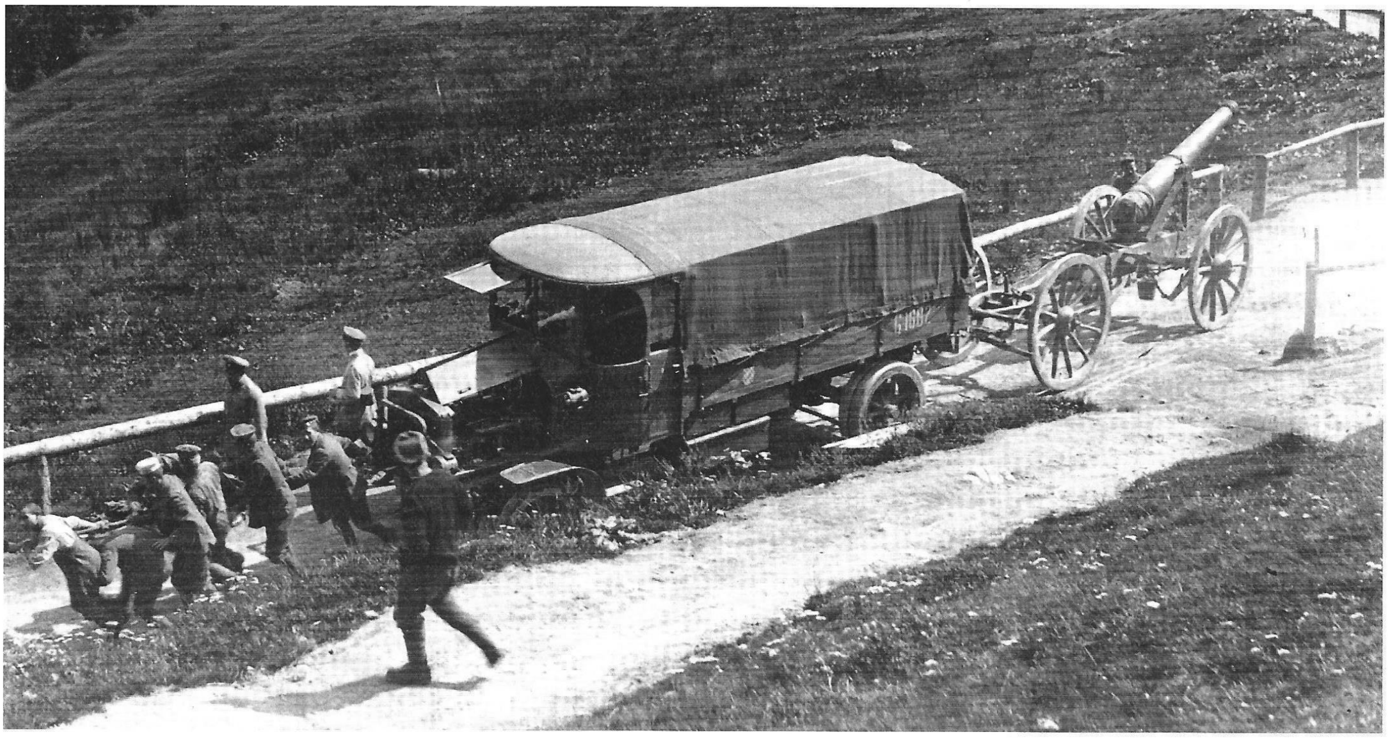
***Armee Flugpark 2* seems to have been equipped with many Büssing trucks, and here these two examples are hauling spare fighter airplane wings. Note that these trucks are a 1915 *Typ IV* in the foreground and a 1914 *Typ IV* in the background – the differences in bonnet and cab design become very clear here.** Credit: Jochen Vollert Collection



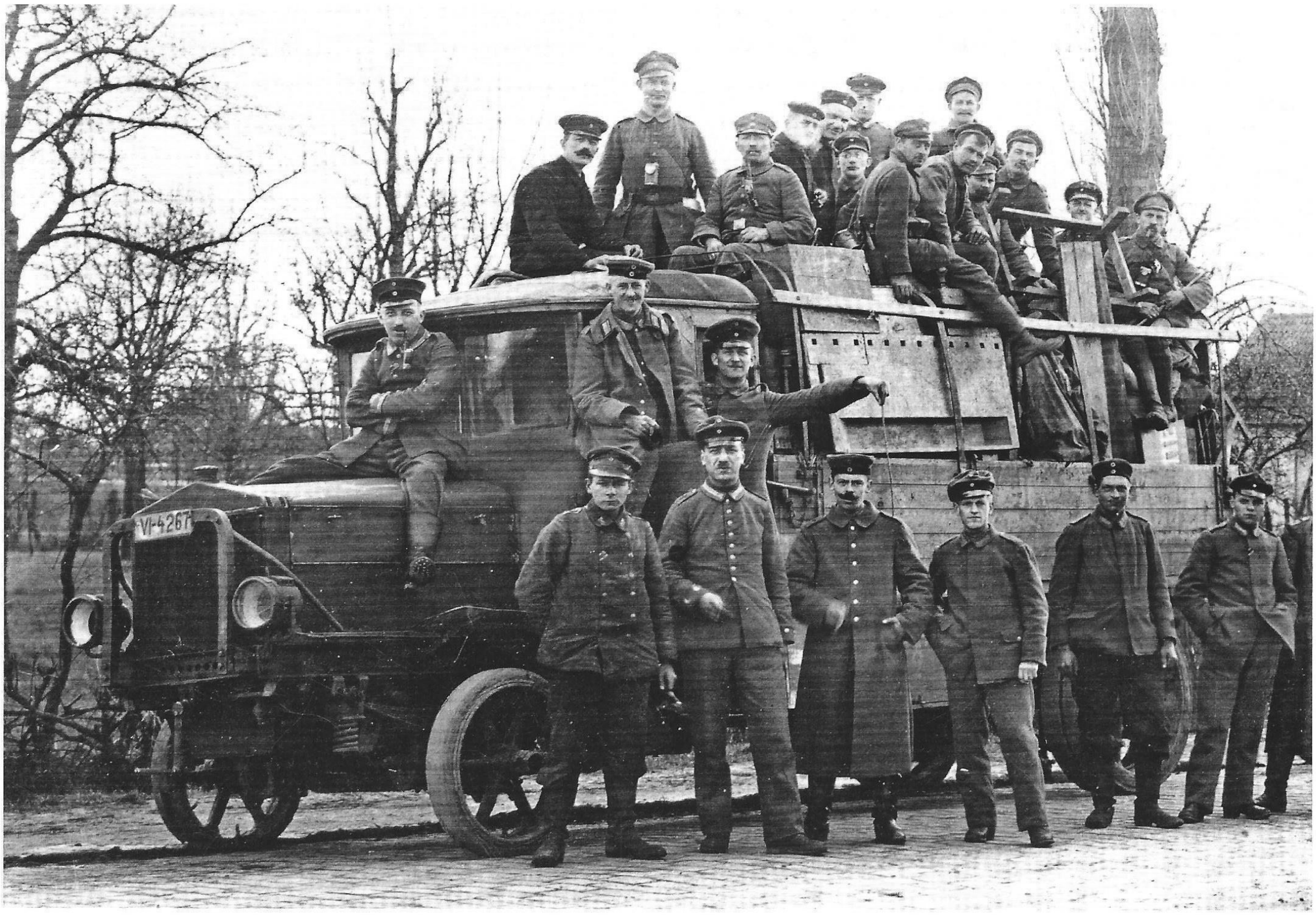
The signs of hard daily duty are visible on this 1915 Büssing *Typ III/IV/V* in service with the Bavarian *Etappen-Kraftwagen-Kolonne* 5 of *VII Armee*. The truck was subjected to a number of field improvisations such as an improvised wooden cab, compared with the metal soft-top cab trucks on the previous page. Note also the huge irregular stowage box under the cargo bay, and the refitted radiator brush guard. Credit: Jochen Vollert Collection



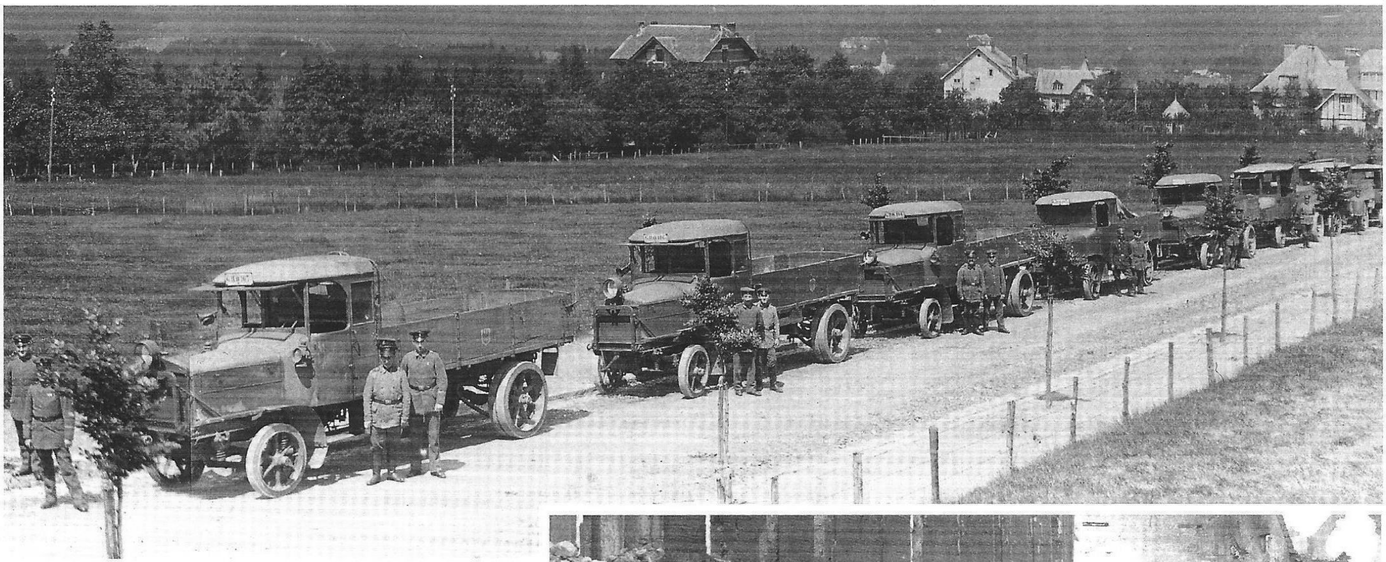
From about 1916, the Büssing truck line for the Imperial German Army was furthermore subjected to modernisation and simplification. Most prominently, the standard soft-top cab gave way to a closed cab on the production line, and the radiator brush guard became standard. This photo taken on the Eastern Front is dated June 1917, and is rare proof of the arrival of a fresh delivery of no fewer than twelve new Büssings. Note the rear-view mirrors fitted, on both trucks on this page, but these were by no means standard in this era. Credit: Jochen Vollert Collection



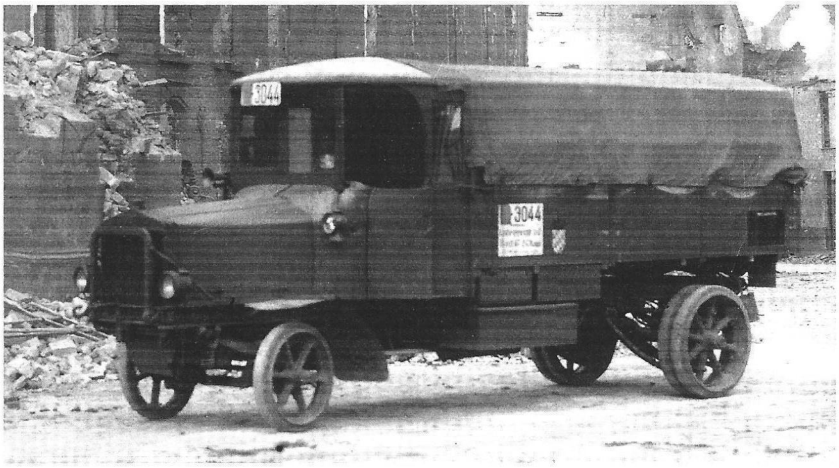
A rare view of the top of a 1916 Büssing allows identification of details of the closed cab roof and the tarpaulin cover over the cargo compartment. The truck is in service with an unidentified Bavarian unit, towing a field gun, and has obviously suffered a breakdown.
Credit: Jochen Vollert Collection



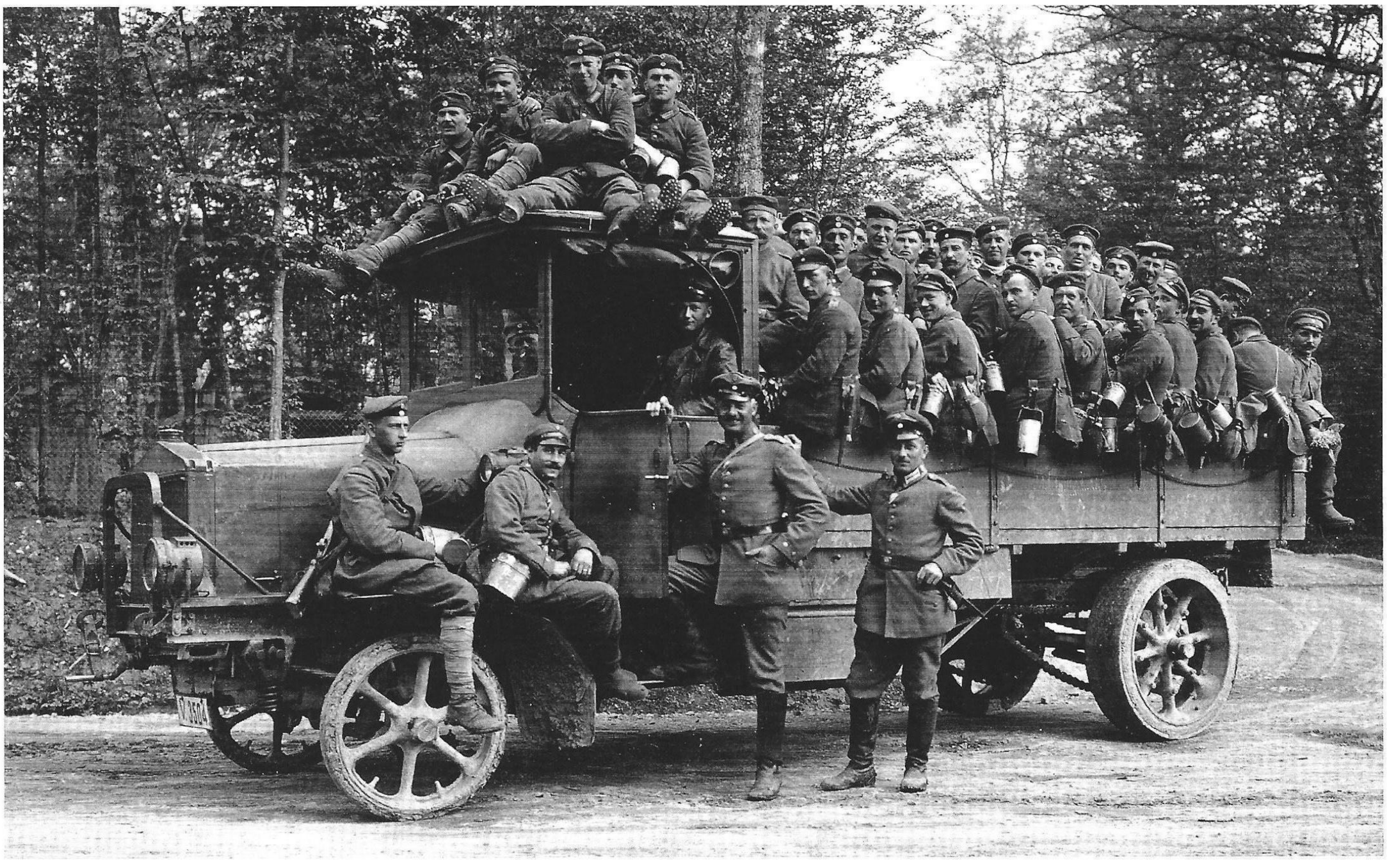
Not all duties included serving with fighting units on the front. The Imperial German Army had a "*Wasserkopf*" of excessive bureaucracy in the hinterland. This is a 1916 Büssing *Typ III/IV/V* with a closed cab serving in the role of a furniture moving van for *VI Armee*.
Credit: Jochen Vollert Collection



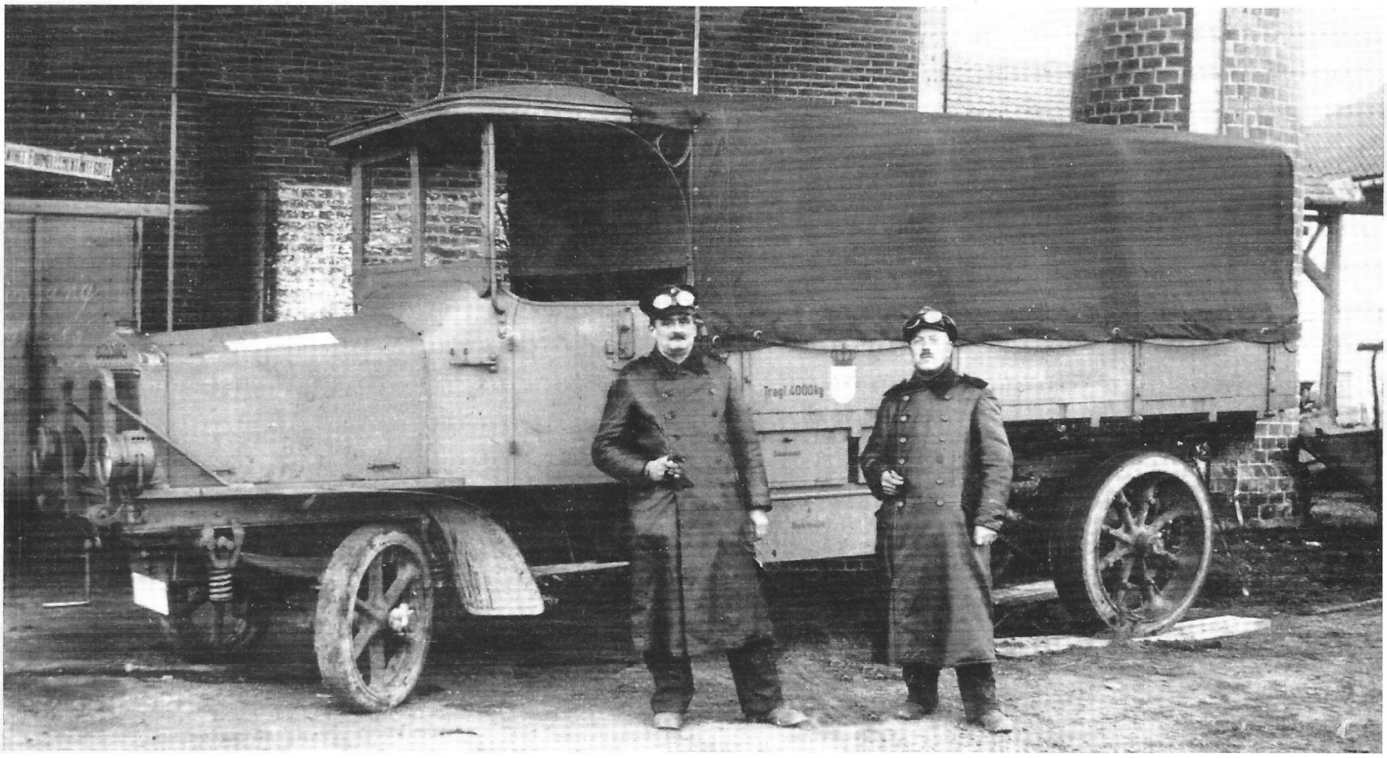
This column of Büssing trucks with hardtop cabs shows the use of one large central headlight, rather than two front headlights of standard type. The '*G.H.Q.*' licence plates denote the *Großes Haupt-Quartier* (Supreme Headquarters). Credit: Jochen Vollert Collection



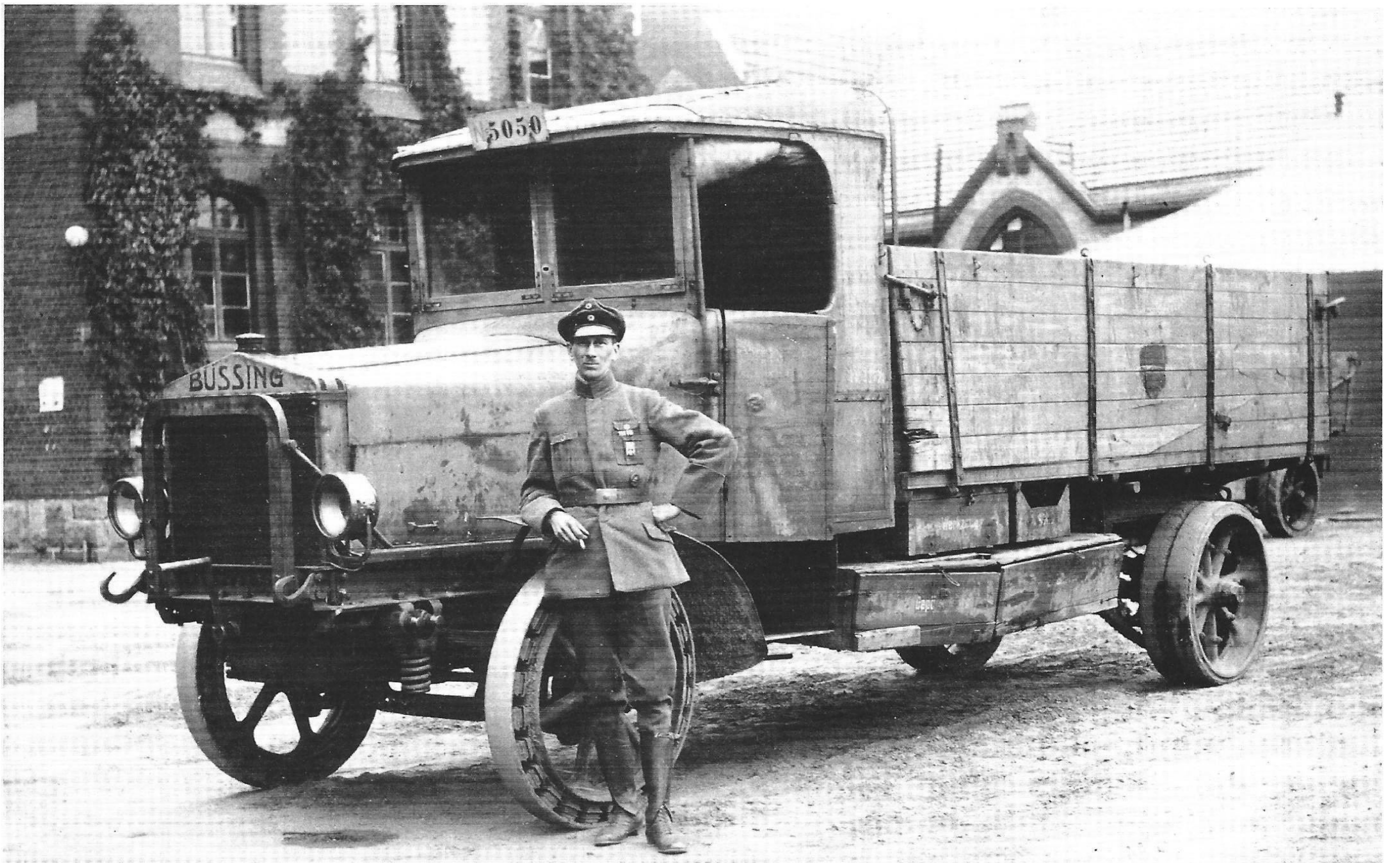
This is truck no. 3044 of an unidentified Bavarian unit. Of interest is the non-standard set of wheels without the typical 'screw and splint' combination in between the spokes that were used to fit the rubber rims. Credit: Jochen Vollert Collection



If one ever wondered what a full payload of 20 or 30 soldiers looks like, here is the answer! Note the well visible worm of the screwed rubber rims in-between the metal spokes. Credit: Jochen Vollert Collection



In 1918 the final wartime version of the Büssing truck appeared. The most prominent external feature was the even more simplified design of the engine compartment side covers, now made of one single piece of sheet metal. Also note the no-longer-fitted upper headlights and the full-steel rear wheels including steel running surfaces. This is a *Typ IV* Büssing with a payload of 4 tons; see the payload rating of *Tragfähigkeit 4000kg* next to the Bavarian Army crest. Credit: Jochen Vollert Collection



The end of the war is near – and the abysmal appearance of this 1918 model Büssing *Typ III/IV/V* in this photo tells the whole story. The photo was taken in the last year of the Great War, shortly after the *Kriegsbedingte Notbereifung* (emergency wartime tyres) had been introduced because of insurmountable rubber shortages. The new all-steel tyres cushioned with rubber set in cups are well visible on the front axle. Note also the patched-up hardtop cab door, the stowage boxes that are almost falling apart, and the replacement engine compartment side covers that no longer fit properly. An interesting detail is the difference in size of the front wheel when compared to the version in the photo above. Credit: Jochen Vollert Collection

03.9 Daag / DAAG Trucks

DAAG (Deutsche Last-Automobil-Fabrik AG) was founded in 1910 as an extension to Rather Armaturen- und Metallgießerei AG of 1906. Based in Ratingen near Düsseldorf, DAAG from 1910 built a 1.5-ton truck and offered a 3-ton and a 4- to 5-ton truck, all powered by 4-cylinder 30hp-38hp engines.

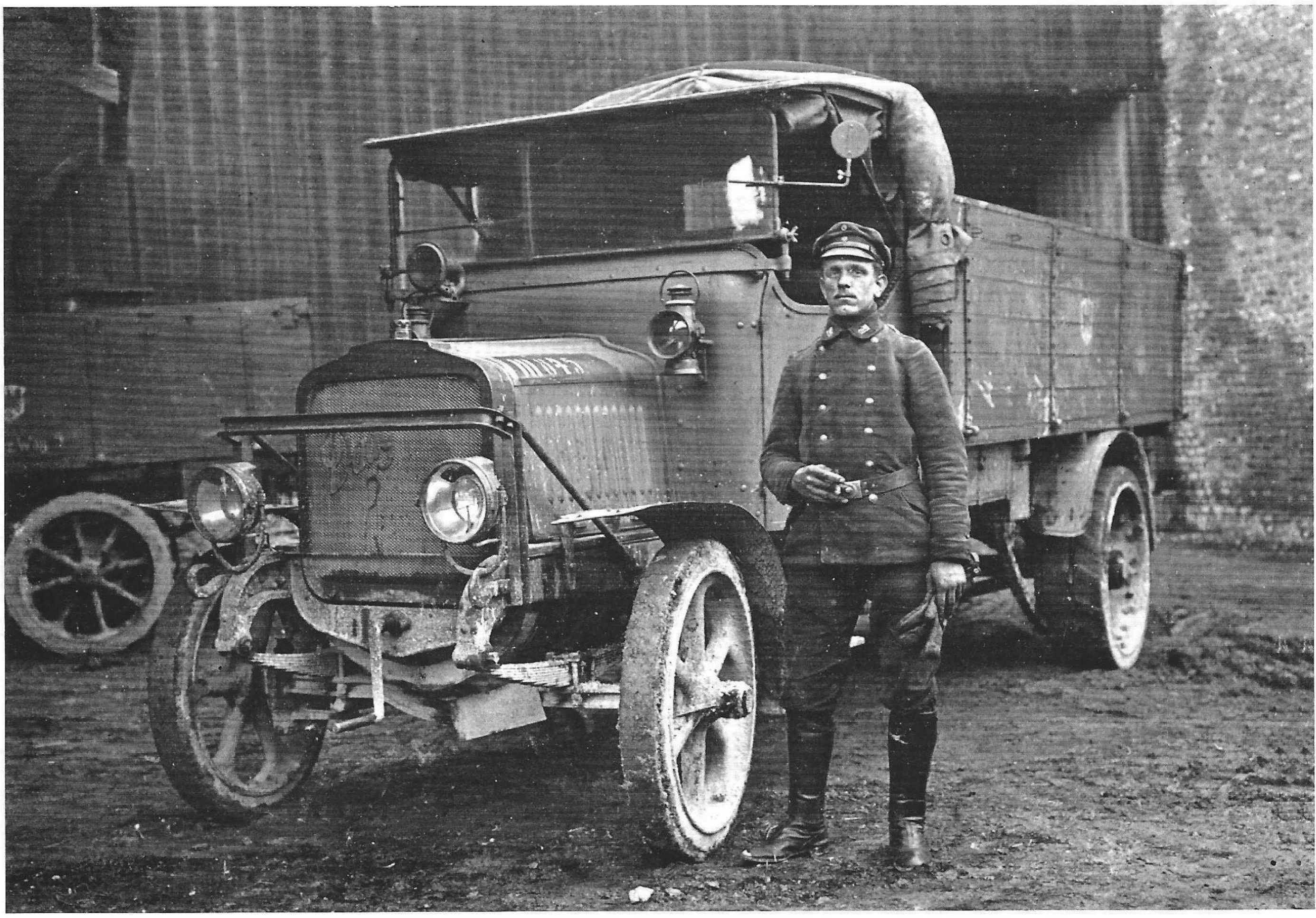
In 1911, DAAG reported having participated successfully in the *Prüfungsfahrt* trial run of the Prussian Department of Transport that took place in the northern districts of Germany and, as a result, the DAAG design was accepted as a *Subventionswagen* for the subsidy scheme in Prussia. A little later, the Bavarian Army also showed interest in the subsidy type, subsequently and aptly named "*Subventionswagen 1913*". The first buyer reportedly was a brewery from Dortmund. In 1913 the range comprised a

°	1.5-ton	powered by a 4-cylinder 30hp 2472cc engine
°	2-ton	powered by a 4-cylinder 38hp 3176cc engine
°	2.5-ton	powered by a 4-cylinder 38hp 3176cc engine
°	3.5-ton	powered by a 4-cylinder 38hp 5192cc engine
°	4- to 6-ton	powered by a 4-cylinder 45hp 7359cc engine.

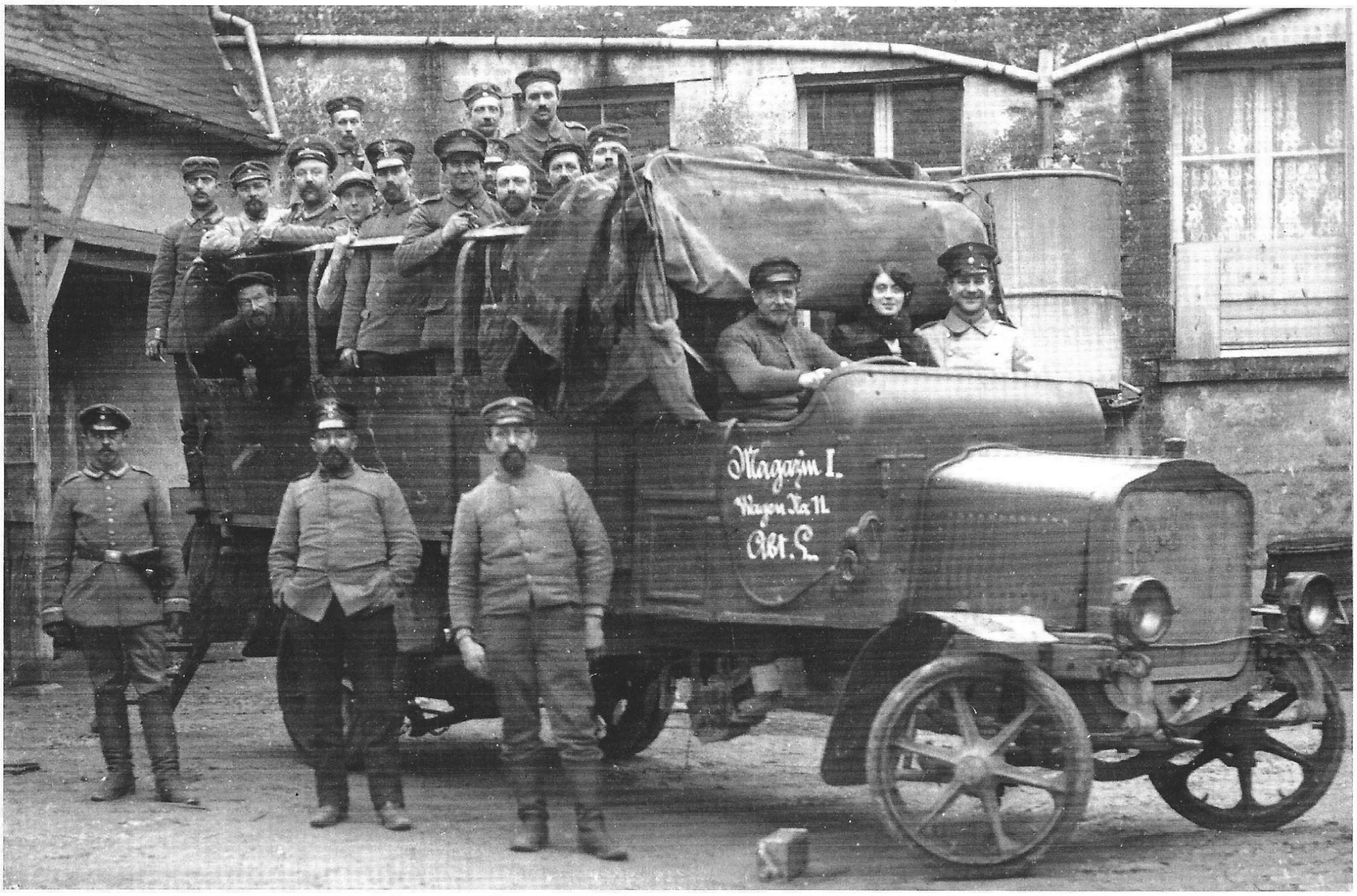
During the war, DAAG built a *Regel-Dreitonner*

°	3.5-ton	powered by 4-cylinder 38hp 5192cc engine

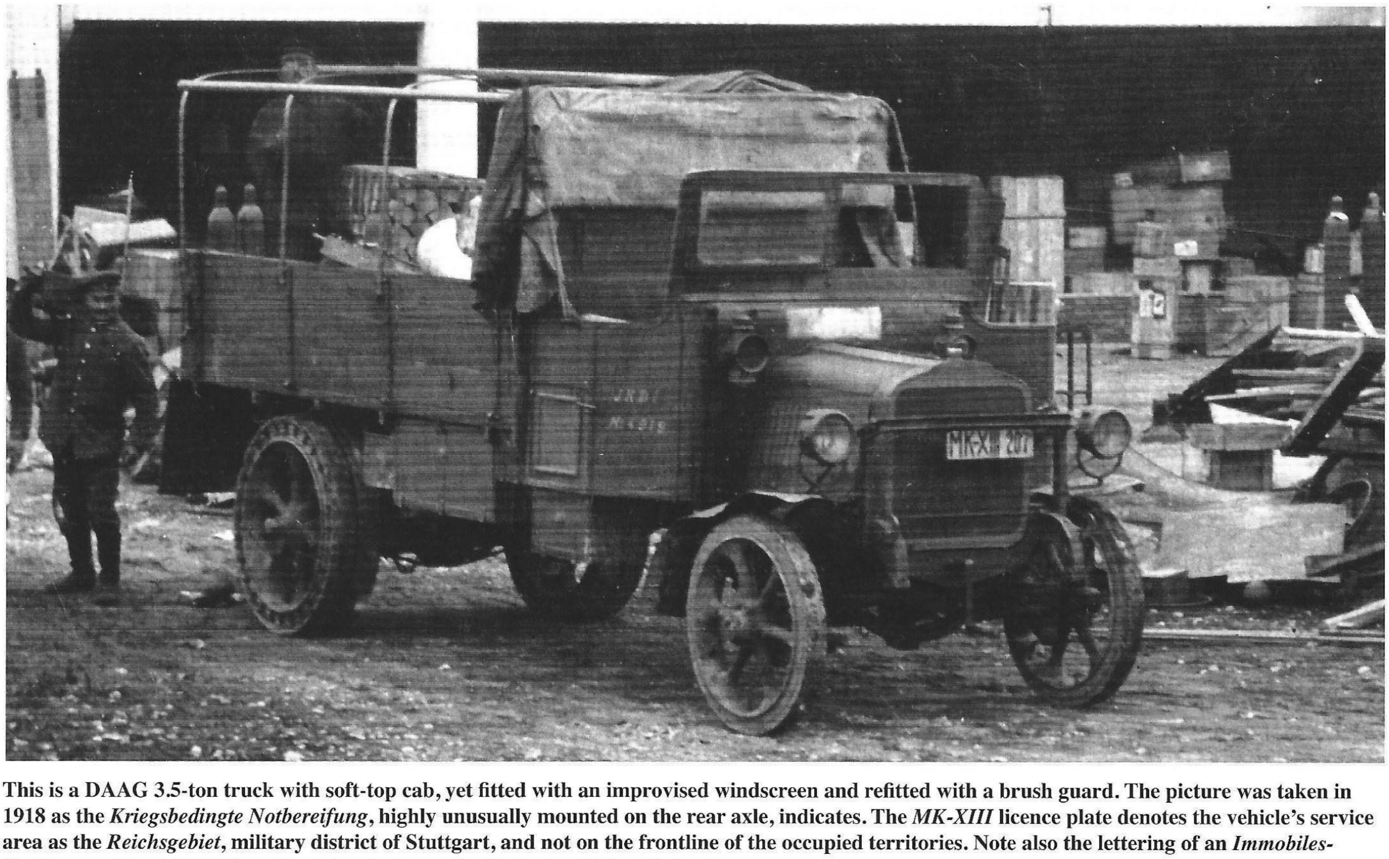
based on pre-war subsidy models, as well as continued production of the 4- to 6-ton truck model. No production figures for DAAG are on file, yet based on the number of surviving photos, the run could have exceeded 1,000 vehicles.



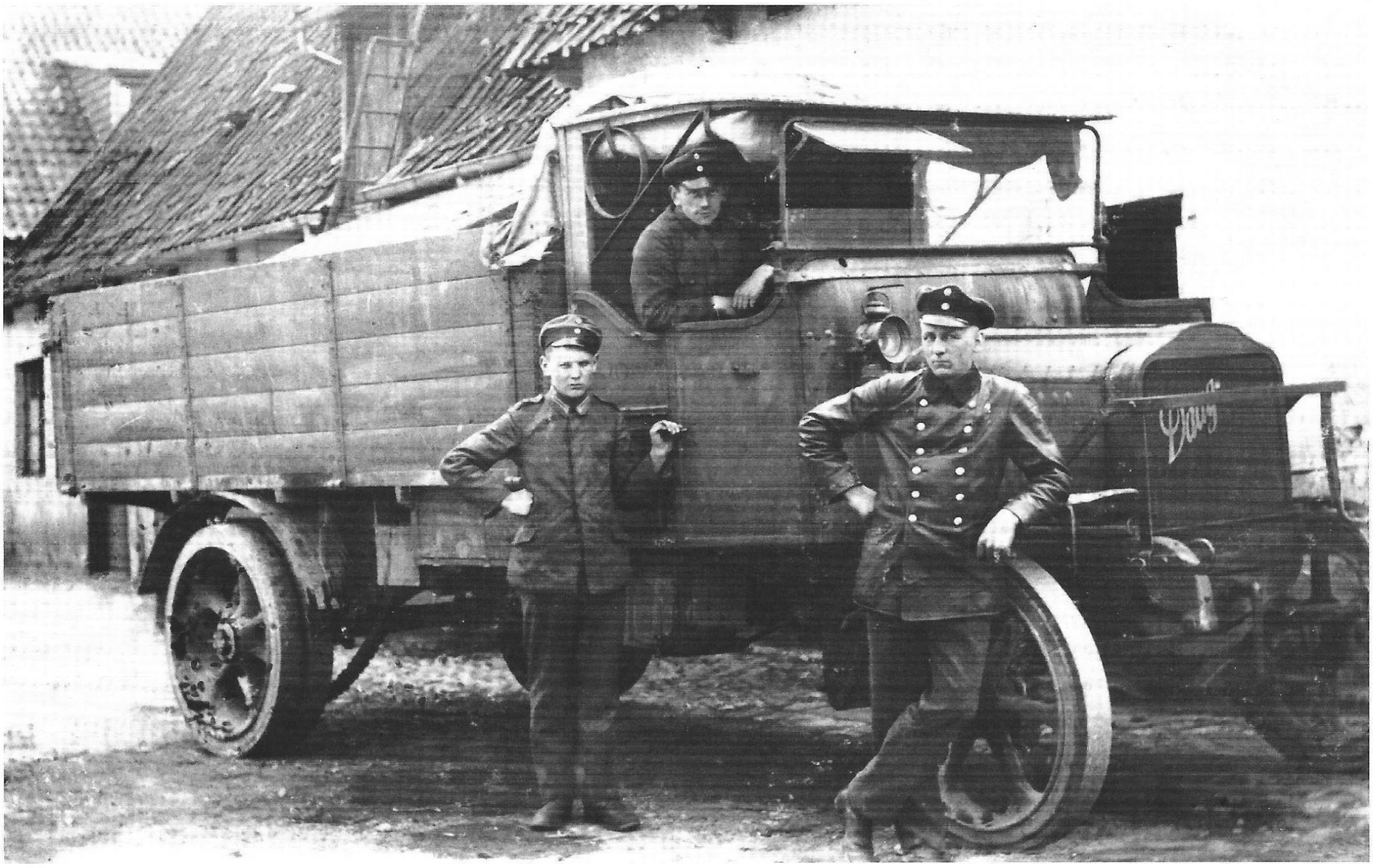
The 3.5-ton DAAG trucks of 1913-18 followed the proven *Heeresmodell* outlines for subsidy trucks with dual rear tyres, a chain drive and a payload in excess of 3 tonnes. DAAG trucks came with soft-top cabs or later, during the war, with closed cabs. Fitted from the start of production was the radiator brush guard made from U-shaped steel profiles. As with many trucks from this era, DAAG models came with four headlights, two in front of the radiator and two in front of the cab. Note the typical company lettering on the radiator front that comes in the phonetic version of DAAG: 'Daag' as well as the rear view mirror on the assistant driver's side. The soldier wears the cloth version of the *Fahranzug*. Credit: Jochen Vollert Collection



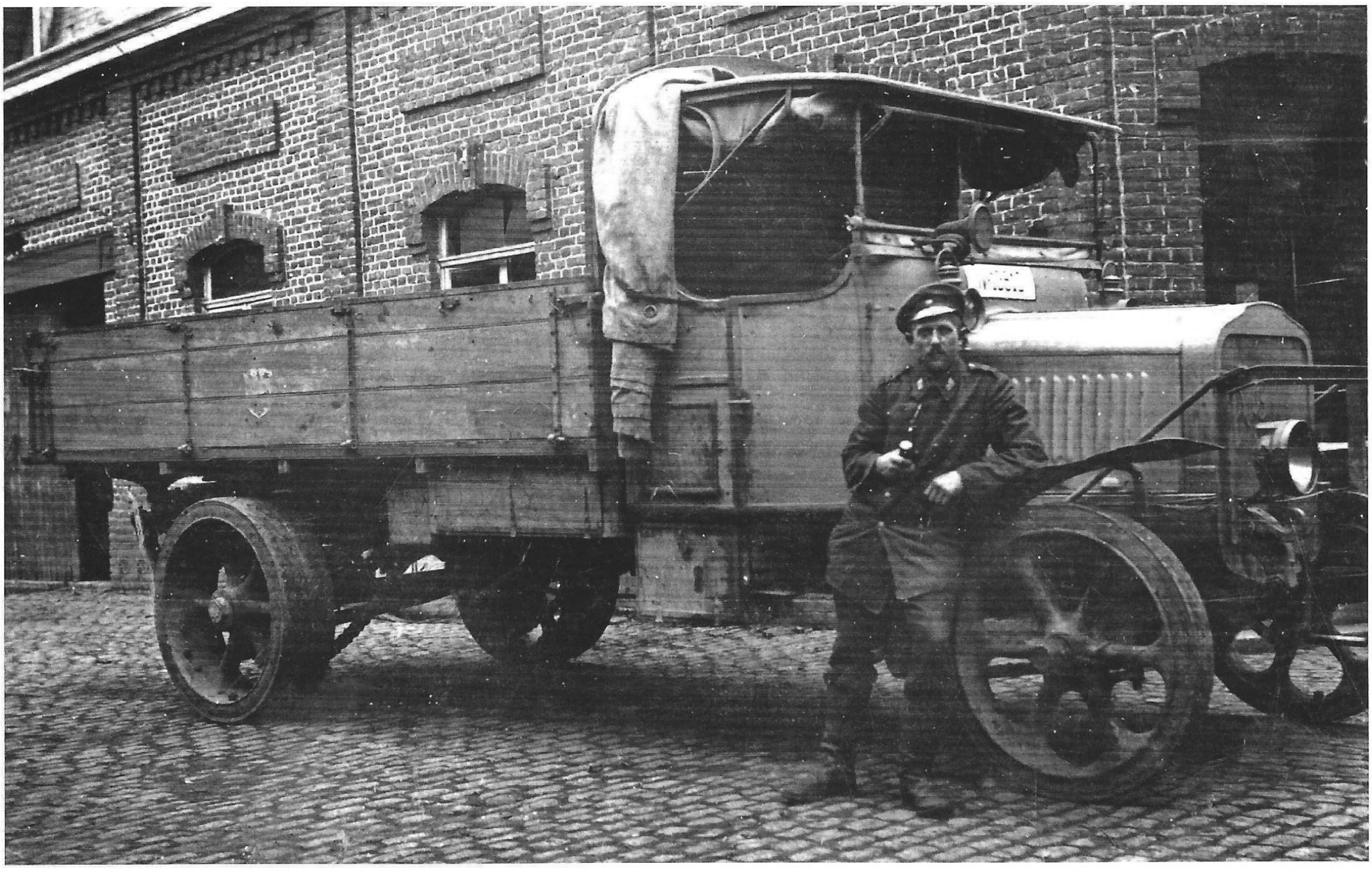
This DAAG serves as a background for a commemorative picture of workers male and female, and soldiers of the *Magazin I* warehouse. The unusual handwritten lettering on the driver's door states that the vehicle is truck no. 11 of this unit. The sheer size of the engine compartment and cargo bay puts this example into the 3.5-ton to 6-ton payload range, and the folding soft-top, absent windscreen and absent brush guard make this an impressed commercial vehicle. Note also the comparatively small diameter of the civilian front wheels. Credit: Jochen Vollert Collection



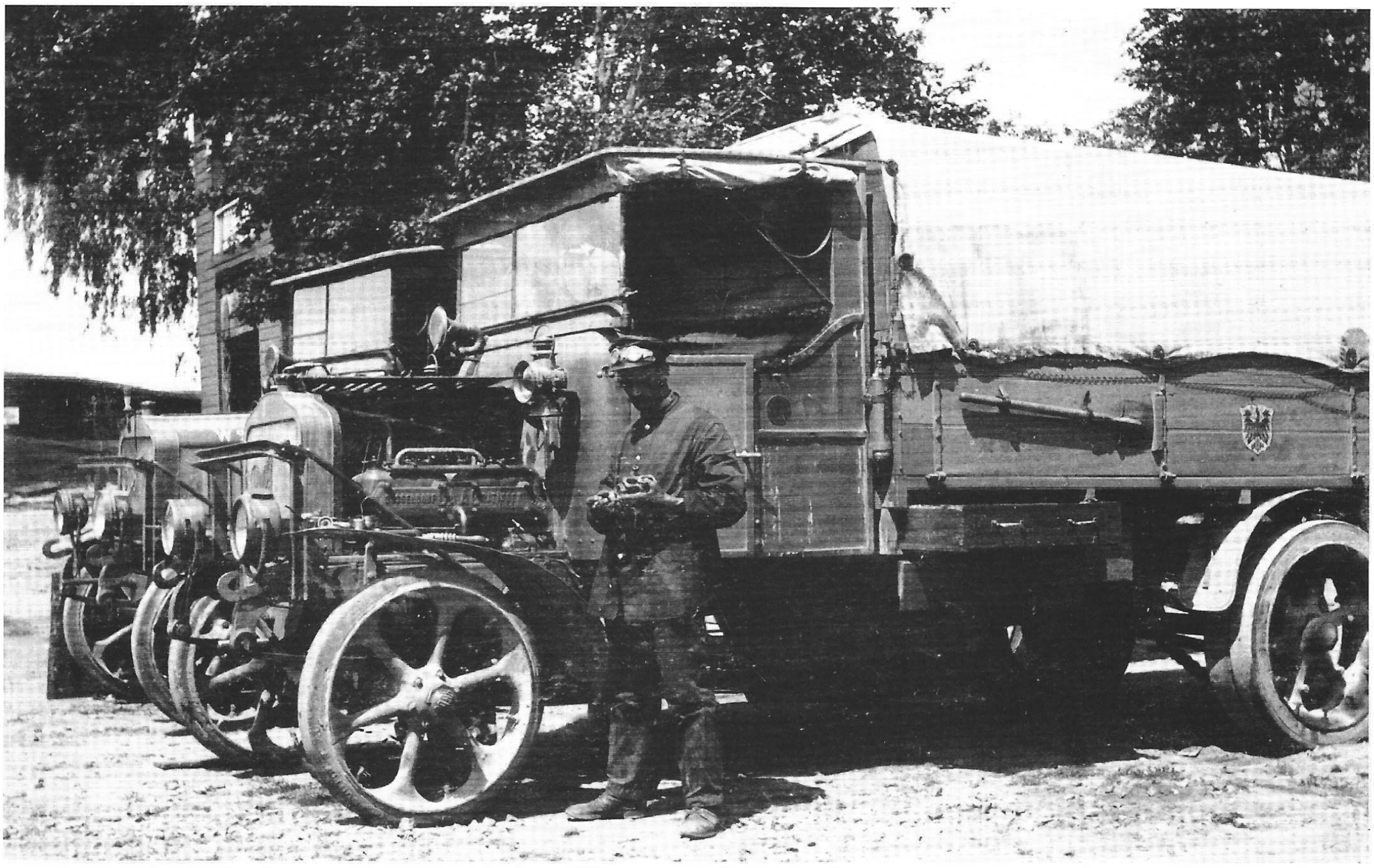
This is a DAAG 3.5-ton truck with soft-top cab, yet fitted with an improvised windscreen and refitted with a brush guard. The picture was taken in 1918 as the *Kriegsbedingte Notbereifung*, highly unusually mounted on the rear axle, indicates. The *MK-XIII* licence plate denotes the vehicle's service area as the *Reichsgebiet*, military district of Stuttgart, and not on the frontline of the occupied territories. Note also the lettering of an *Immobiles-Kraftwagen-Depot* ('*JKD*') on the driver's door. Credit: Jochen Vollert Collection



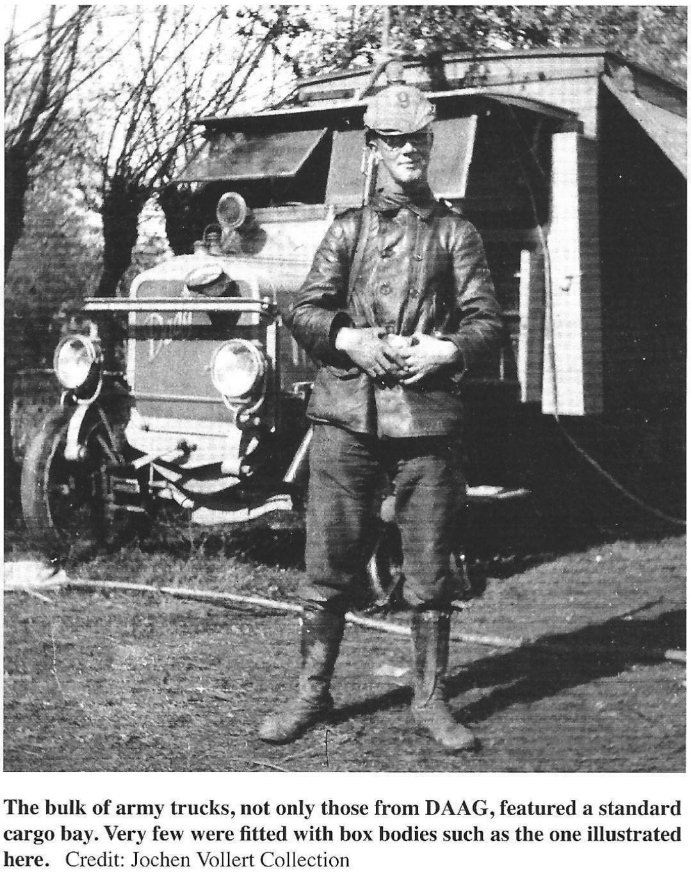
As usual practice, *Heereswagen* army trucks would receive, from the production line, a hardtop cab with windscreen during the war years. The 'Daag' company name on the radiator remained. Also note the running surface made of steel on the front wheel. Credit: Jochen Vollert Collection



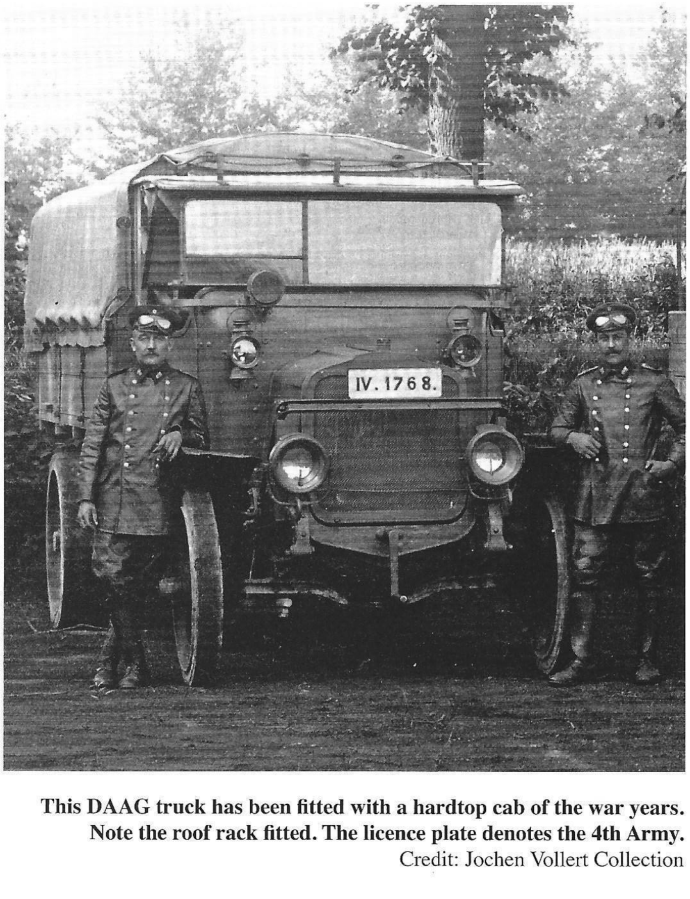
This DAAG 3.5-ton truck of the 4th Army sports a standard radiator brush guard made of U-shaped profiles, along with a hardtop cab. DAAG trucks of this era came with low side-panel cargo bays (here) or high side panels (see above). Credit: Jochen Vollert Collection



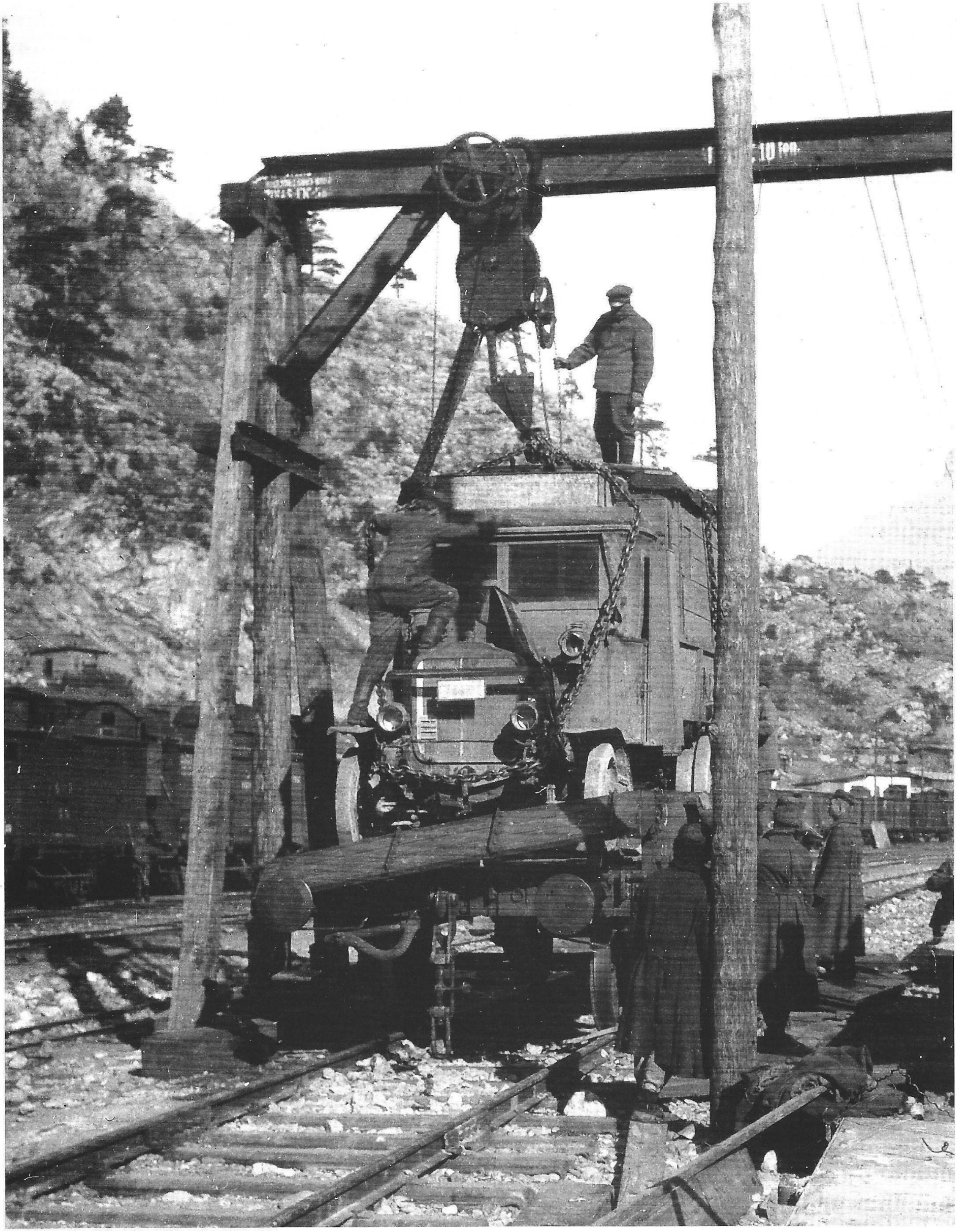
Two DAAG trucks parked in the sunshine provide a closer look at some details of the design. Both vehicles feature the closed cab introduced during the war with a windscreen; the one in front has cloth curtains for the cab sides fitted and rolled up. Note the spade and Prussian crest marking on the side of the cargo bay. A look inside the engine compartment shows the manufacturer's *'Düsseldorf DA.AG Ratingen'* cast onto the engine's side. Also note the 'Daag' hubcap on the front axle, and the horns fitted in front of the driver's station. The rubber-rimmed front wheels and the steel-rimmed rear wheels allow a good direct comparison. Credit: Jochen Vollert Collection



The bulk of army trucks, not only those from DAAG, featured a standard cargo bay. Very few were fitted with box bodies such as the one illustrated here. Credit: Jochen Vollert Collection



This DAAG truck has been fitted with a hardtop cab of the war years. Note the roof rack fitted. The licence plate denotes the 4th Army. Credit: Jochen Vollert Collection



An as-yet unmarked 3.5-ton DAAG truck, here fitted with unusually high side panels around the cargo bay, is being loaded from a railroad flatbed. The trucks of that era were not designed for continued long-distance rides, thus transport by rail to the designated area of service was common practice. The absence of any markings and a plain licence plate denote that this is a replacement vehicle for a frontline unit.
Credit: Jochen Vollert Collection

03.10 Daimler / Daimler Trucks

Founded in 1896 as Gottlieb Daimler-Fabrik, the company was renamed Daimler-Motoren-Gesellschaft in 1900. The founder was Gottlieb Daimler, one of the pioneers of combustion engine design and early motoring in Germany. The company was at first located in Cannstatt, then after a fire in the original production facilities, it moved to Stuttgart-Untertürkheim in 1904.

Gottlieb Daimler is considered the father of German truck making, as he built and sold the first ever German-built truck, a 1.5-ton vehicle with a 2-cylinder 4hp 1006cc engine, on 01 October 1896. That truck was sold to England. In the same year, a 2.5-ton truck with a 2-cylinder 6hp 1530cc engine was designed, and buses soon followed to expand the range. In 1897 came new trucks, this time a 3.75-ton model with 8hp 2800cc engine and a 5-ton type with 10hp or 12hp 3700cc engines.

In July 1902, Daimler took over Motorfahrzeug und Motorenfabrik Berlin that had built a number of 1.5-ton to 2.5-ton trucks from 1896-98, and it launched a second production facility in Berlin-Marienfelde. The products produced there from 1903 were also marketed under the label Daimler-Marienfelde.

Also in 1902, Daimler-Motoren-Gesellschaft trademarked the name "Mercedes" for its products. The famous *Dreizackstern* trident star, today better known as the *Mercedesstern*, was introduced in 1909.

From 1903-11, Daimler/Daimler-Marienfelde began to build an extensive range of trucks such as the DM 2a, DM 2b, DM 4a, DM 4c, DM 5 and DM 6 in the payload ranges from 1.5 tons to 6 tons, and with engines from 8hp to 70hp. The number of designs is beyond the scope of this publication.

The first year that is most relevant to military trucks is the period 1912-13, when no less than twelve designs caught the interest of the army.

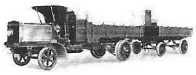
°	DM 2 a	1.5- to 2-ton	powered by a 4-cylinder 22hp 3560cc engine
°	DM 2 b	1.5- to 2-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 2 ½ a	2- to 2.5-ton	powered by a 4-cylinder 22hp 3560cc engine
°	DM 2 ½ b	2- to 2.5-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 3 a	3- to 3.5-ton	powered by a 4-cylinder 30hp 4900cc engine
°	DM 3 b	3- to 3.5-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 4 a	4-ton	powered by a 4-cylinder 30hp 4900cc engine
°	DM 4 b	4-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 5 a	5-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 5 b	5-ton	powered by a 4-cylinder 45hp 7234cc engine
°	DM 6 b	6-ton	powered by a 4-cylinder 45hp 7234cc engine

For the period of 1914-15 there were several changes to the range:

°	DM 2 a	2-ton	powered by a 4-cylinder 22hp 3560cc engine
°	DM 2 b	2-ton	powered by a 4-cylinder 30hp 4900cc engine
°	DM 2 c	2-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 2 ½ a	2.5-ton	powered by a 4-cylinder 22hp 3560cc engine
°	DM 2 ½ b	2.5-ton	powered by a 4-cylinder 30hp 4900cc engine
°	DM 2 ½ c	2.5-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 3 a	3.5-ton	powered by a 4-cylinder 30hp 4900cc engine
°	DM 3 b	3.5-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 4 a	4-ton	powered by a 4-cylinder 30hp 4900cc engine
°	DM 4 b	4-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 4 c	4-ton	powered by a 4-cylinder 45hp 7234cc engine
°	DM 4 ½ a	4.5-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 4 ½ b	4.5-ton	powered by a 4-cylinder 45hp 7234cc engine
°	DM 5 a	5-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 5 b	5-ton	powered by a 4-cylinder 45hp 7234cc engine
°	DM 6 a	6-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DM 6 b	6-ton	powered by a 4-cylinder 45hp 7234cc engine

For the period of 1915-17 there were again changes to the range:

°	DC 2 b	2-ton	powered by a 4-cylinder 30hp 4900cc engine
°	DC 2 c	2-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DC 3 b	3-ton	powered by a 4-cylinder 30hp 4900cc engine
°	DC 3 c	3-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DR 4 b	4-ton	powered by a 4-cylinder 30hp 4900cc engine
°	DR 4 c	4-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DR 4 d	4-ton	powered by a 4-cylinder 45hp 7234cc engine



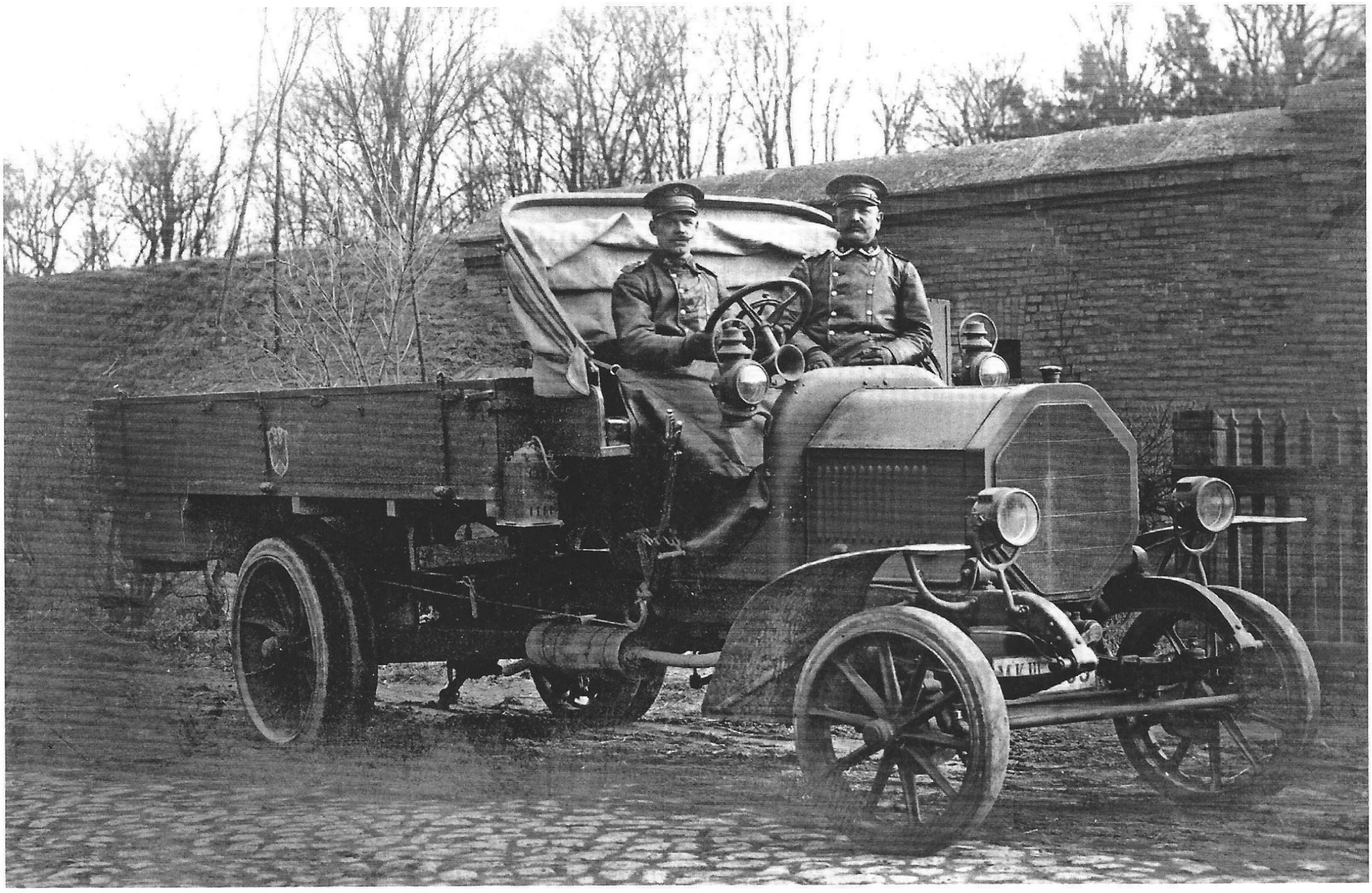
°	DR 4 ½ c	4.5-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DR 4 ½ d	4.5-ton	powered by a 4-cylinder 45hp 7234cc engine
°	DR 5 c	5-ton	powered by a 4-cylinder 35hp 5493cc engine
°	DR 5 d	5-ton	powered by a 4-cylinder 45hp 7234cc engine

"DM" stands for Daimler-Marienfelde.

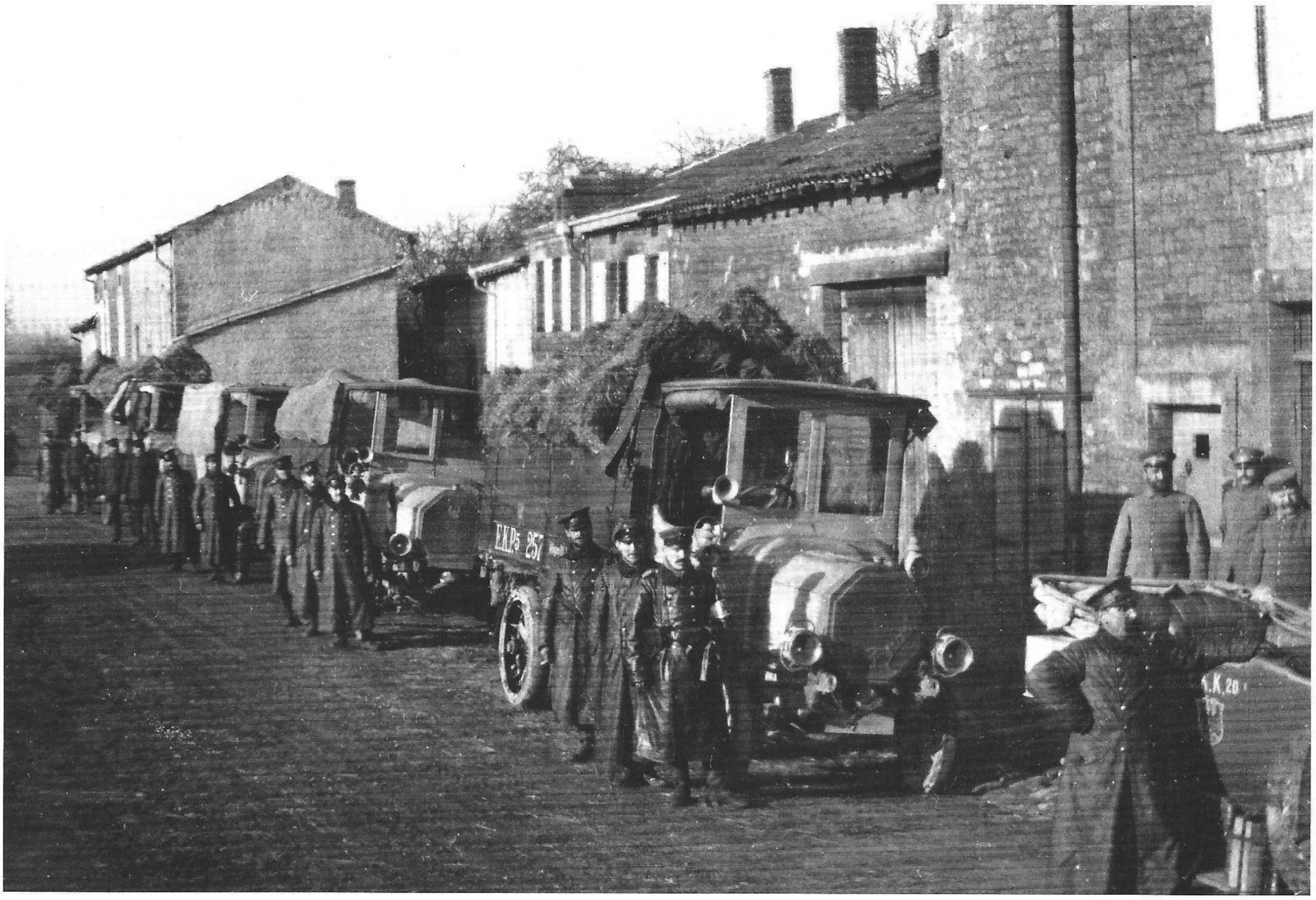
DM 2, DC 2 and DC 3 models had a *Kardanantrieb* Cardan drive, while all other trucks had a *Ritzelantrieb* bevel drive or *Kettenantrieb* chain drive.

With each production year came smaller design changes within the type range, e.g. the change from flat bonnets to tilted bonnets started with the 2-ton range from about 1912/13.

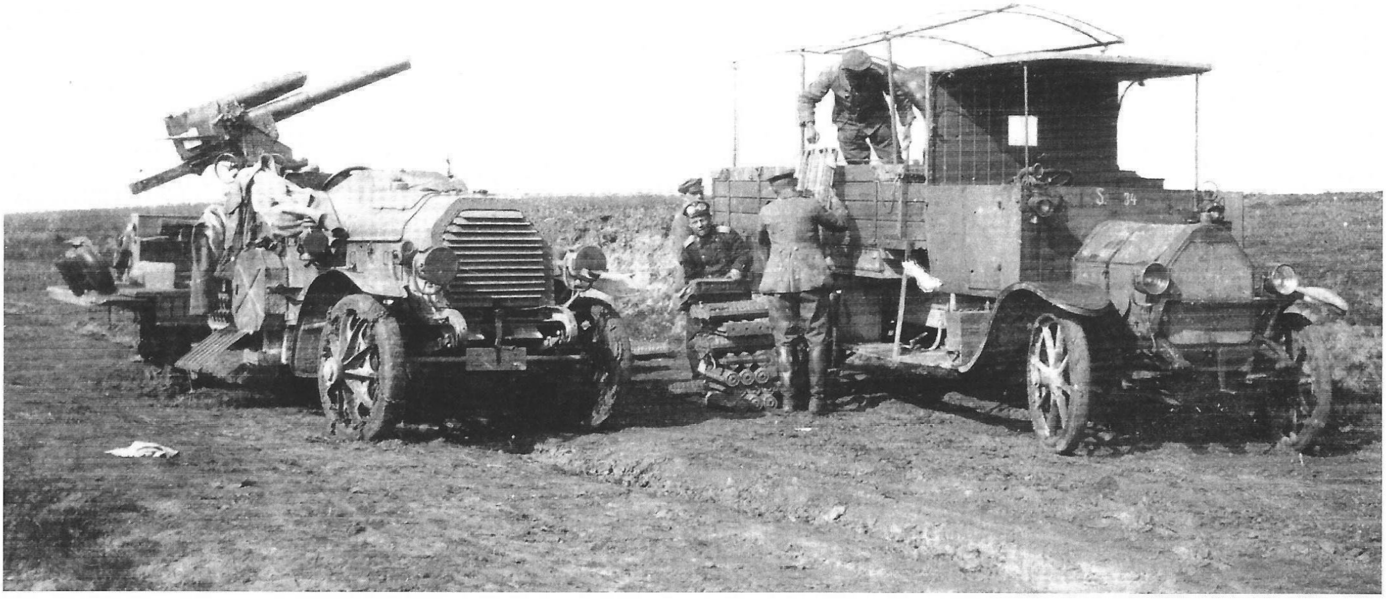
To cope with the huge military demand for vehicles, aircraft, aircraft engines and Zeppelin engines, a new production plant was founded in 1914 at Sindelfingen. In 1914 followed a platform truck for an anti-balloon gun, and in 1918 an artillery prime mover. Wartime production mostly comprised 3-ton to 5-ton trucks.
For Daimler the following production figures (trucks and buses) are available for the relevant period: 1912 (317 vehicles), 1913 (358), 1914 (568), 1915 (605), 1916 (718), 1917 (792) and 1918 (996) yet not split up into types. Based on the fact that the bulk of wartime production was reserved for the military rather than commercial applications, the total number of Daimler trucks serving in the Imperial German Army is estimated at approximately 3,000 plus impressed pre-war vehicles.
In 1926, Daimler-Motoren-Gesellschaft amalgamated with Benz u. Cie to become Daimler-Benz AG.



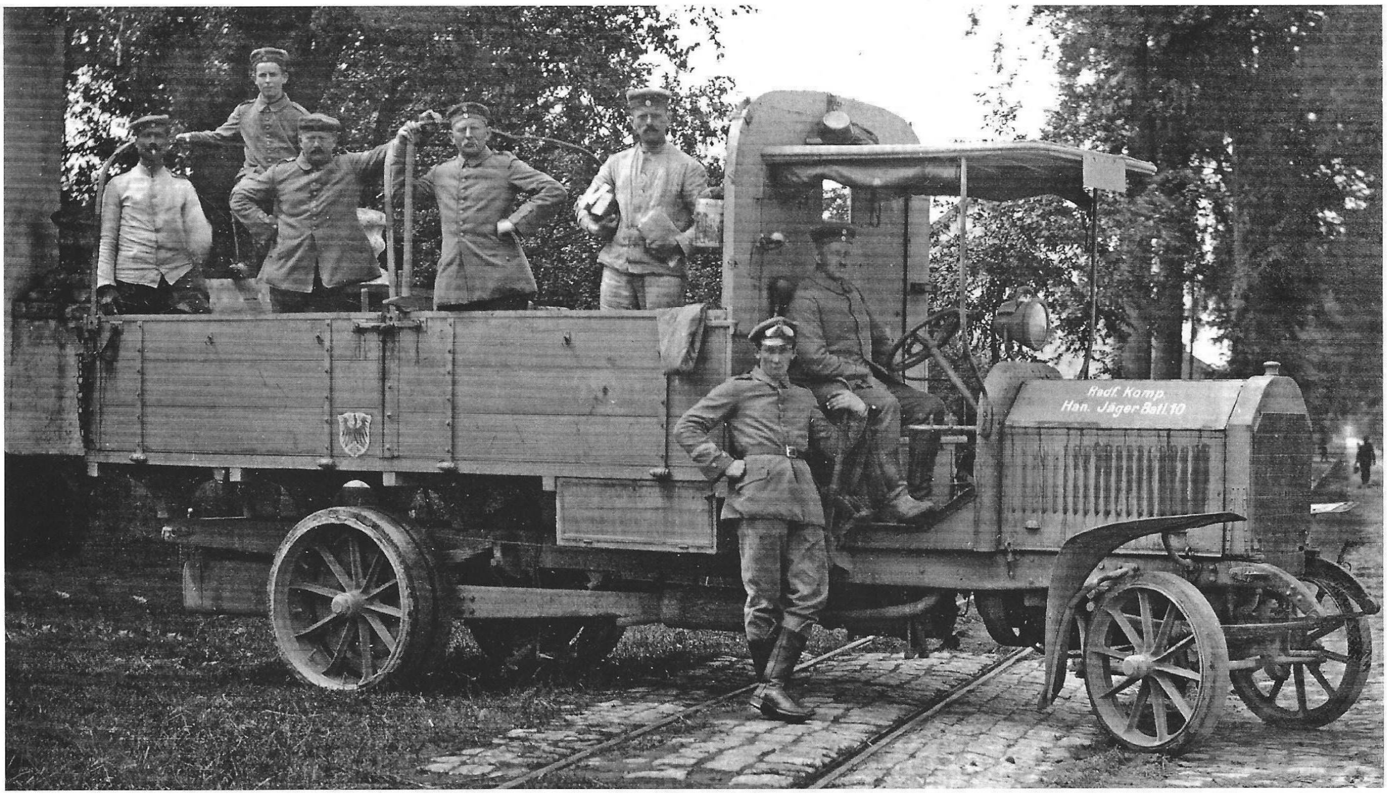
Daimler had a number of design changes for its extensive range and across the five main series of trucks. This impressed pre-war commercial Daimler is a 2- to 2.5-ton truck of the *DM 2* series with Cardan drive and low side panels on the cargo bay. Note the octagonal design of the radiator. As with most pre-war truck designs, this example features a folding soft-top for the cab. Also note the external gearshift lever to the right of the driver. The military licence plate *MK III* is that of the *Reichsgebiet*, military district of Berlin. Credit: Jochen Vollert Collection



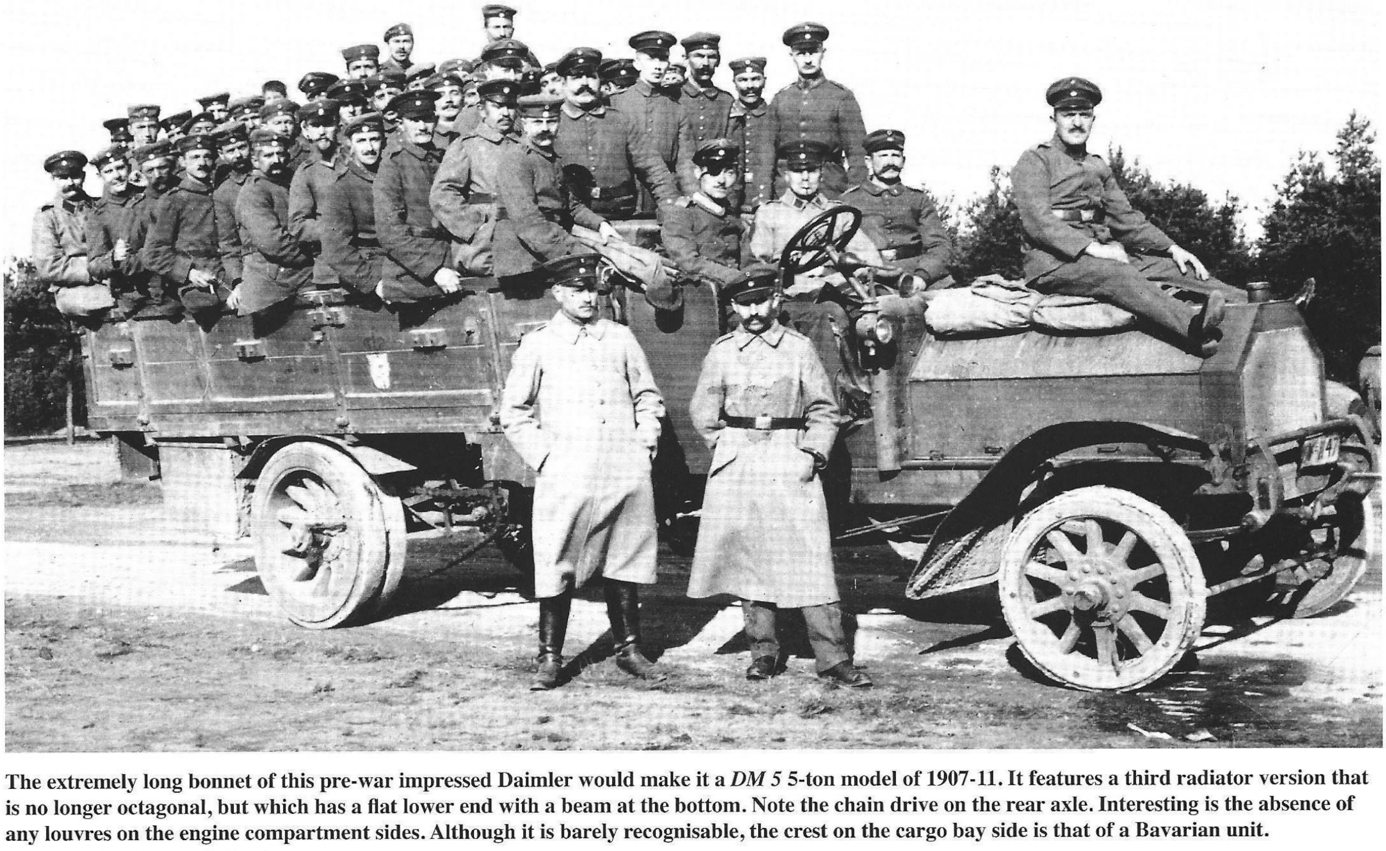
A column of Daimler light trucks in the 2-ton range, here of *Etappen-Kraftwagen-Park 5*. Note the 'Daimler' lettering on the octagonal radiator, and the hardtop cab with windscreen. Credit: Jochen Vollert Collection



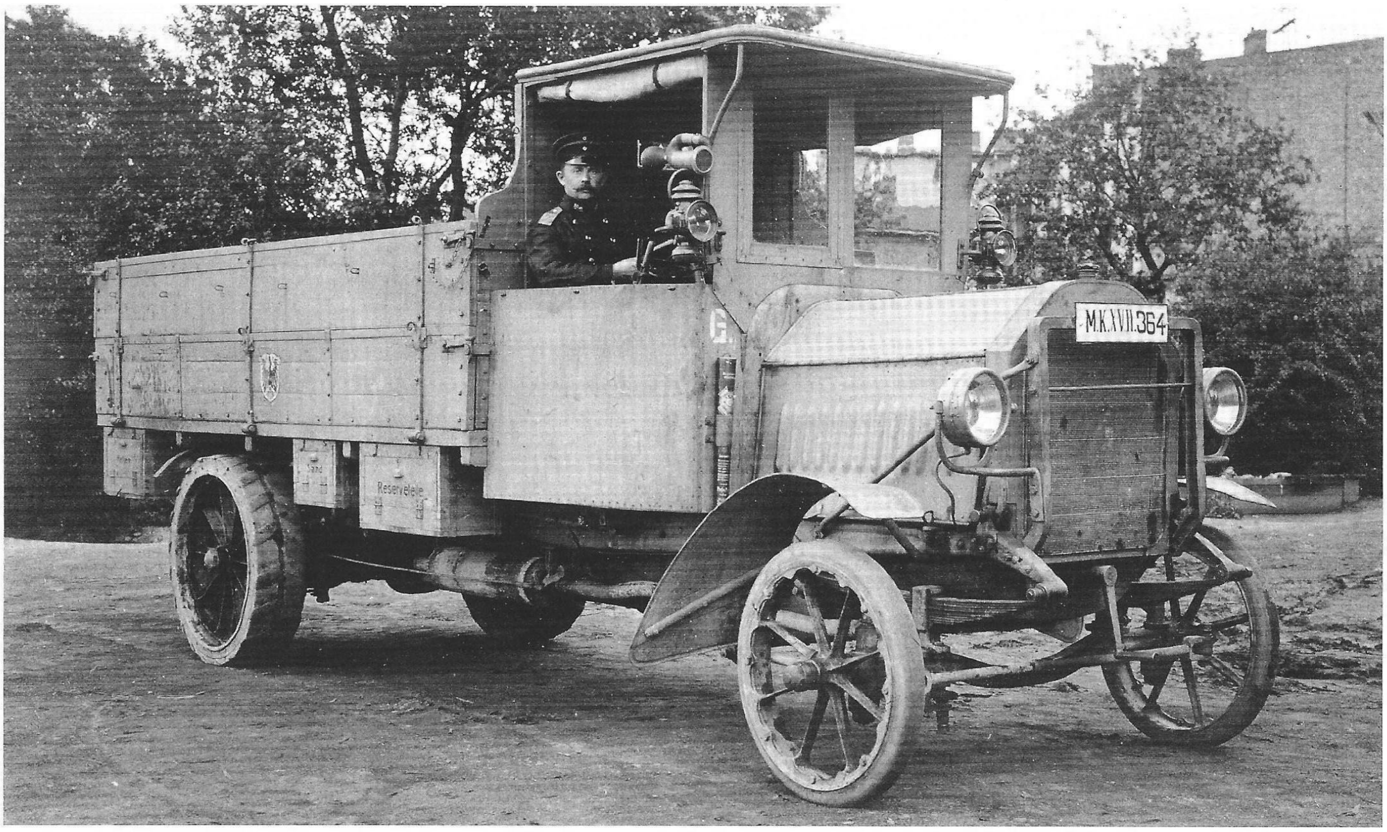
An early impressed commercial Daimler truck of the 2- to 3.5-ton payload range is bombing up a *Krupp-Daimler Plattformwagen Ballonabwehrkanone* anti-balloon gun model 1914. The unusual hardtop cab without a windscreen was not used on *Heeresmodell* trucks.
Credit: Jochen Vollert Collection



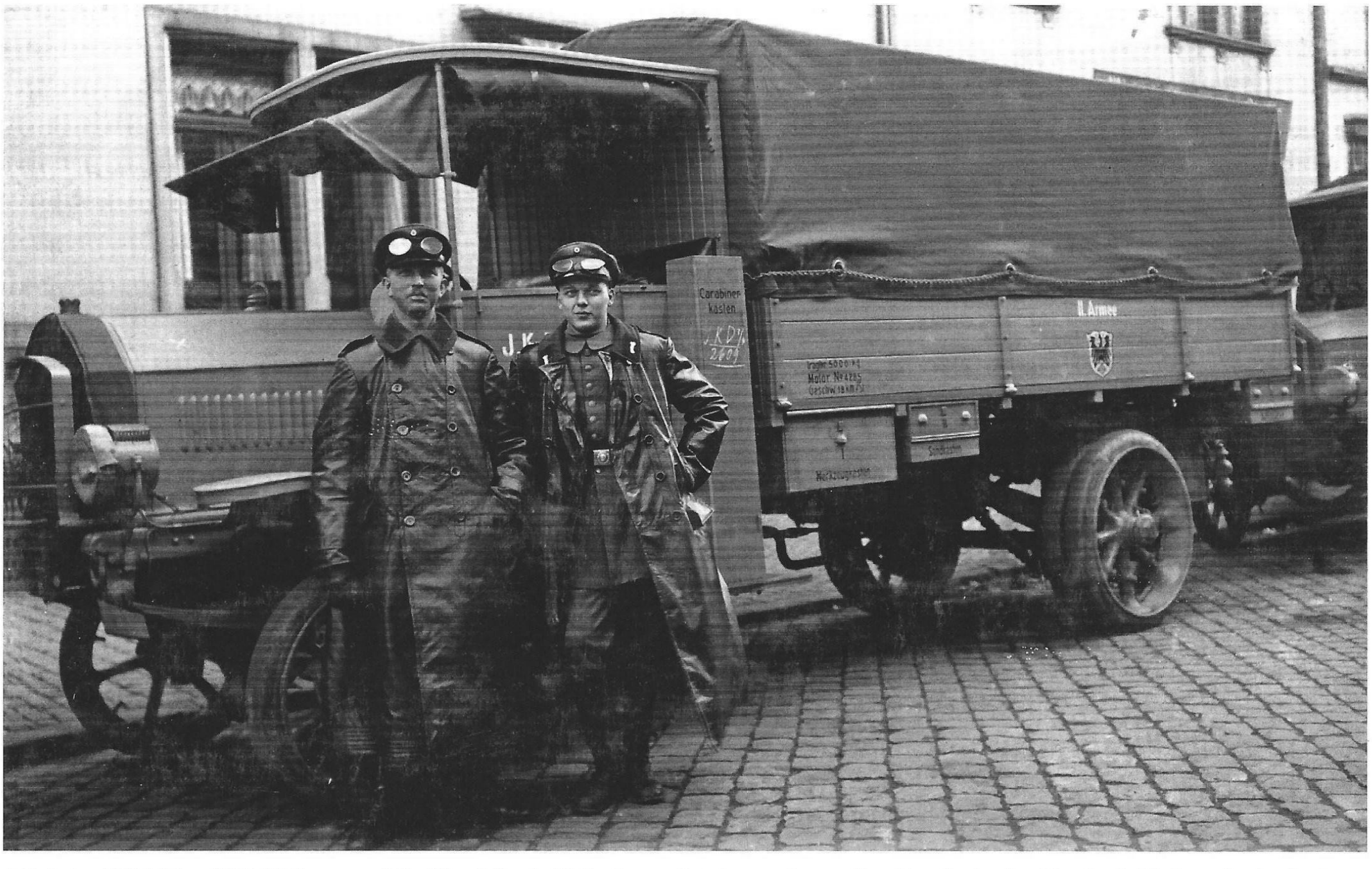
When compared to the smaller outlines and cargo bay of light trucks in the previous photos, this Daimler, sporting another typical radiator design for this manufacturer, is much longer, higher and it possesses a bigger cargo bay. These features put it into the 3-ton to 5-ton payload range. The truck still has the flat bonnet of the pre-war and early-war years, and a bevel drive. Note the absence of a brush guard, plus the front and rear wheels of different diameters. Fascinating is the single centrally-mounted headlight inside the cab. Sadly, there is not enough documentation surviving to exactly tell apart the approximately 50 different Daimler truck types, distributed over three major design shifts. The marking is that of the *Radfahr-Kompanie* (Bicycle Company) of *Hannoversches Jäger* (light rifles) *Bataillon 10* from Goslar. The photo is dated July 1915.
Credit: Jochen Vollert Collection



The extremely long bonnet of this pre-war impressed Daimler would make it a *DM 5* 5-ton model of 1907-11. It features a third radiator version that is no longer octagonal, but which has a flat lower end with a beam at the bottom. Note the chain drive on the rear axle. Interesting is the absence of any louvres on the engine compartment sides. Although it is barely recognisable, the crest on the cargo bay side is that of a Bavarian unit.
Credit: Jochen Vollert Collection

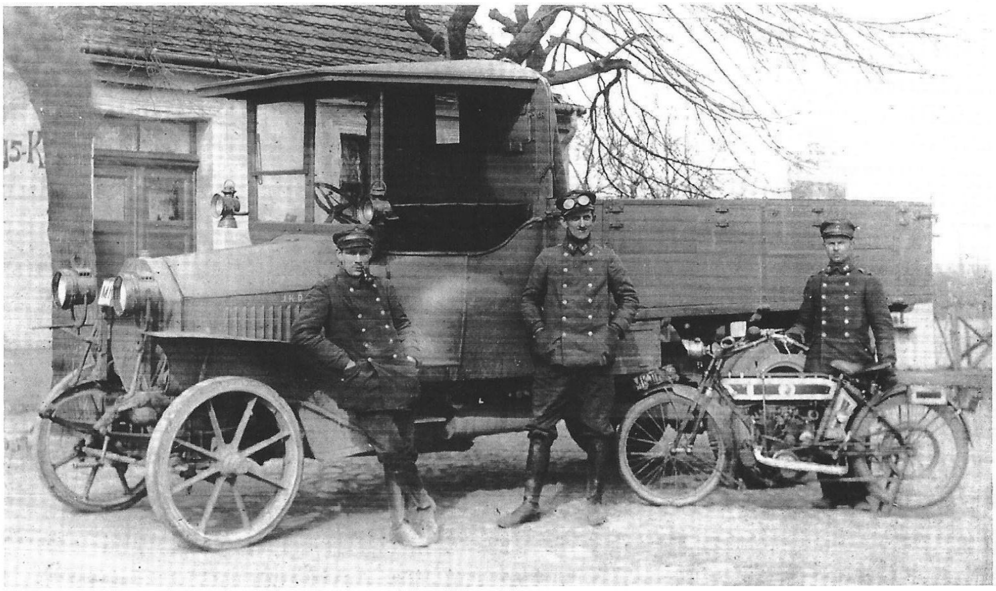


This is a classic *Heeresmodell* army version of a Daimler 3- to 5-ton truck of 1912-13 production, with a closed cab with windscreen, flat bonnet, radiator brush guard, bevel drive and full lettering on the stowage boxes. The large radiator has no lower beam. The *MK XVII* licence plate puts it into the *Reichsgebiet*, military district of Danzig. The '*G*' marking in front of the driver's station is that of *Armee-Abteilung Gaede* (1914-16). Note also the anti-slip tread pattern on the double rear wheels, as well as the unusual front-wheel rim design. Credit: Jochen Vollert Collection

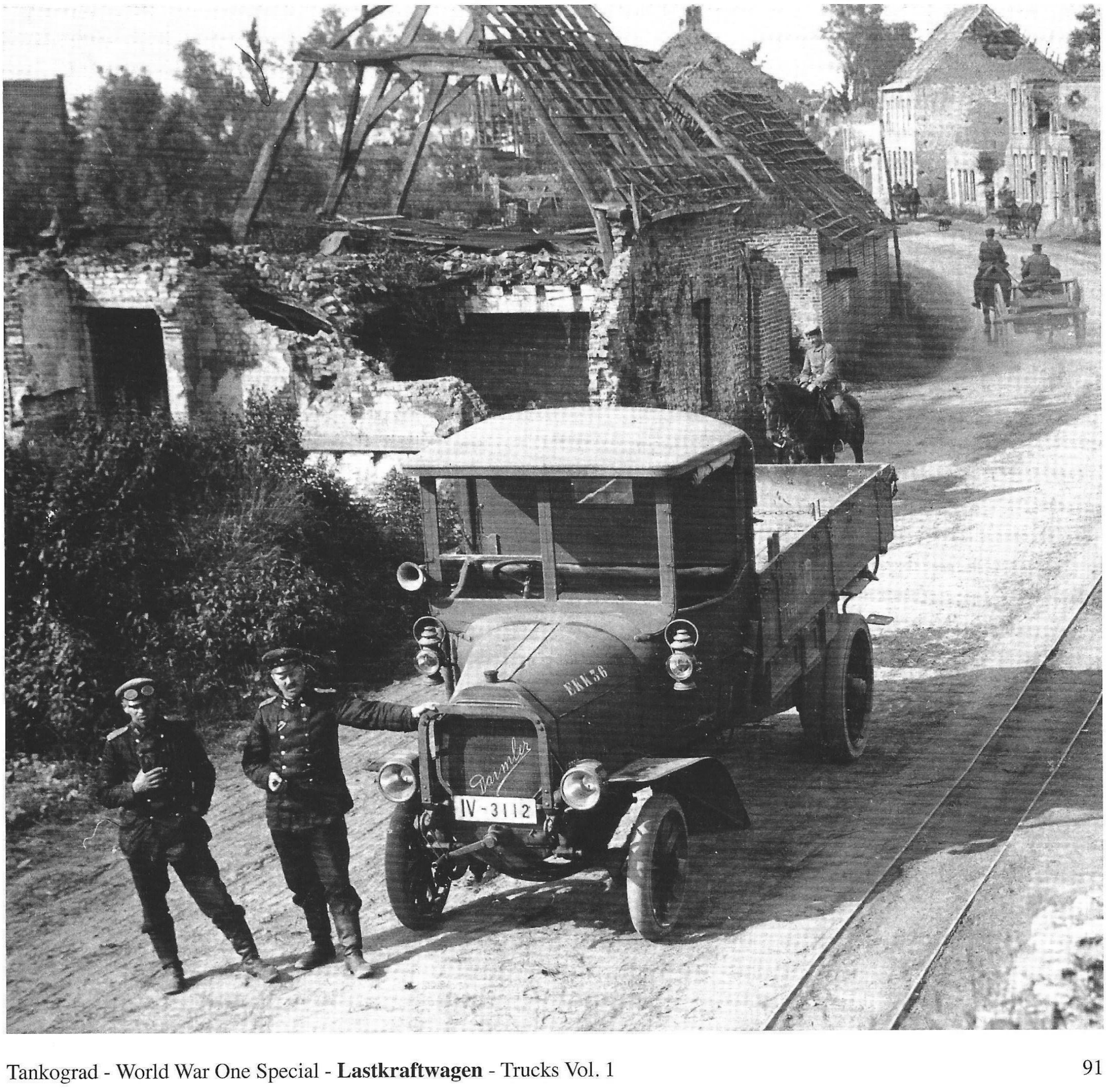


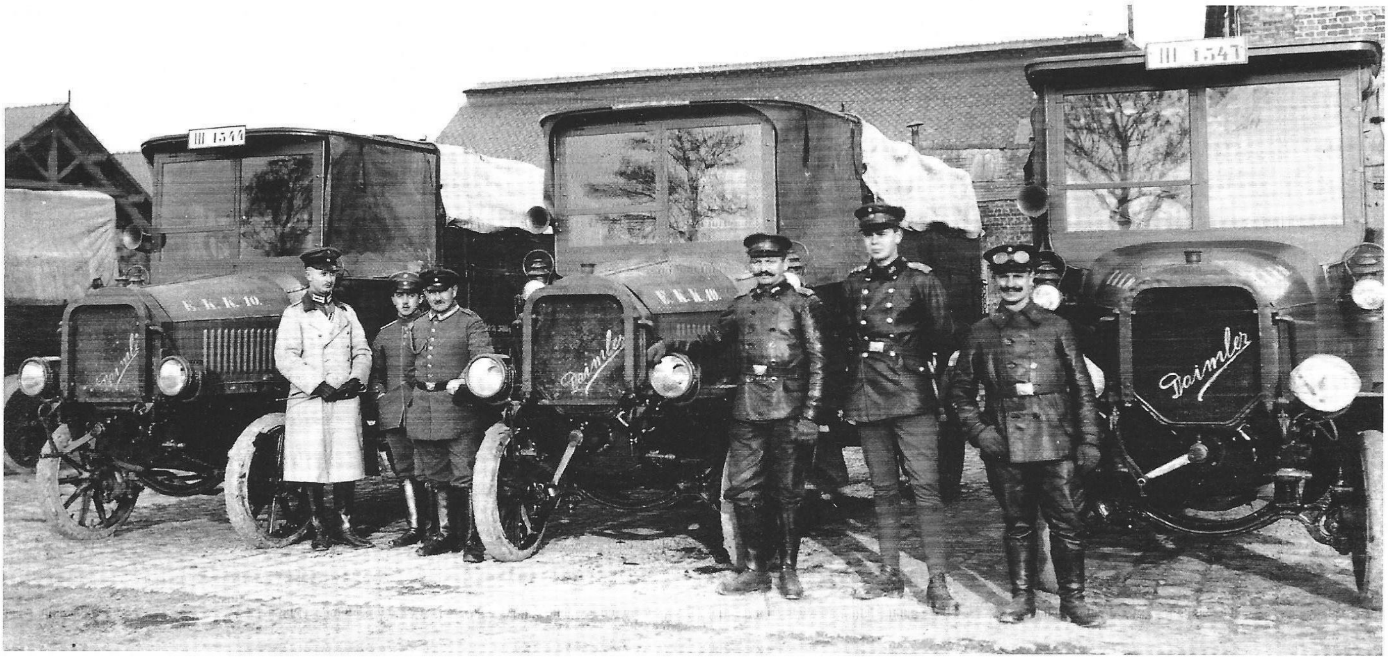
A Daimler *DM 5* 5-ton 1912-13 *Heeresmodell* with a full set of lettering on the stowage boxes: *Carabinerkasten* (carbine box), *Werkzeugkasten* (tool box) and *Sandkasten* (sand box). Note the markings of Prussian 2nd Army in the side of the cargo bay. A closer look reveals that this truck has chain drive rather than the usual bevel drive of this payload class. Credit: Jochen Vollert Collection

From about 1913, a new type of engine compartment was introduced by Daimler. It now featured a bonnet slightly tilted forward – a design that was used up till the end of the war, and subsequently introduced to various series of trucks. All visible details prove the truck in this photo is a Daimler *DM 3* 3.5-ton *Heeresmodell* of the 1914-15 production run. The motorcycle is a 2-cylinder NSU.
Credit: Jochen Vollert Collection

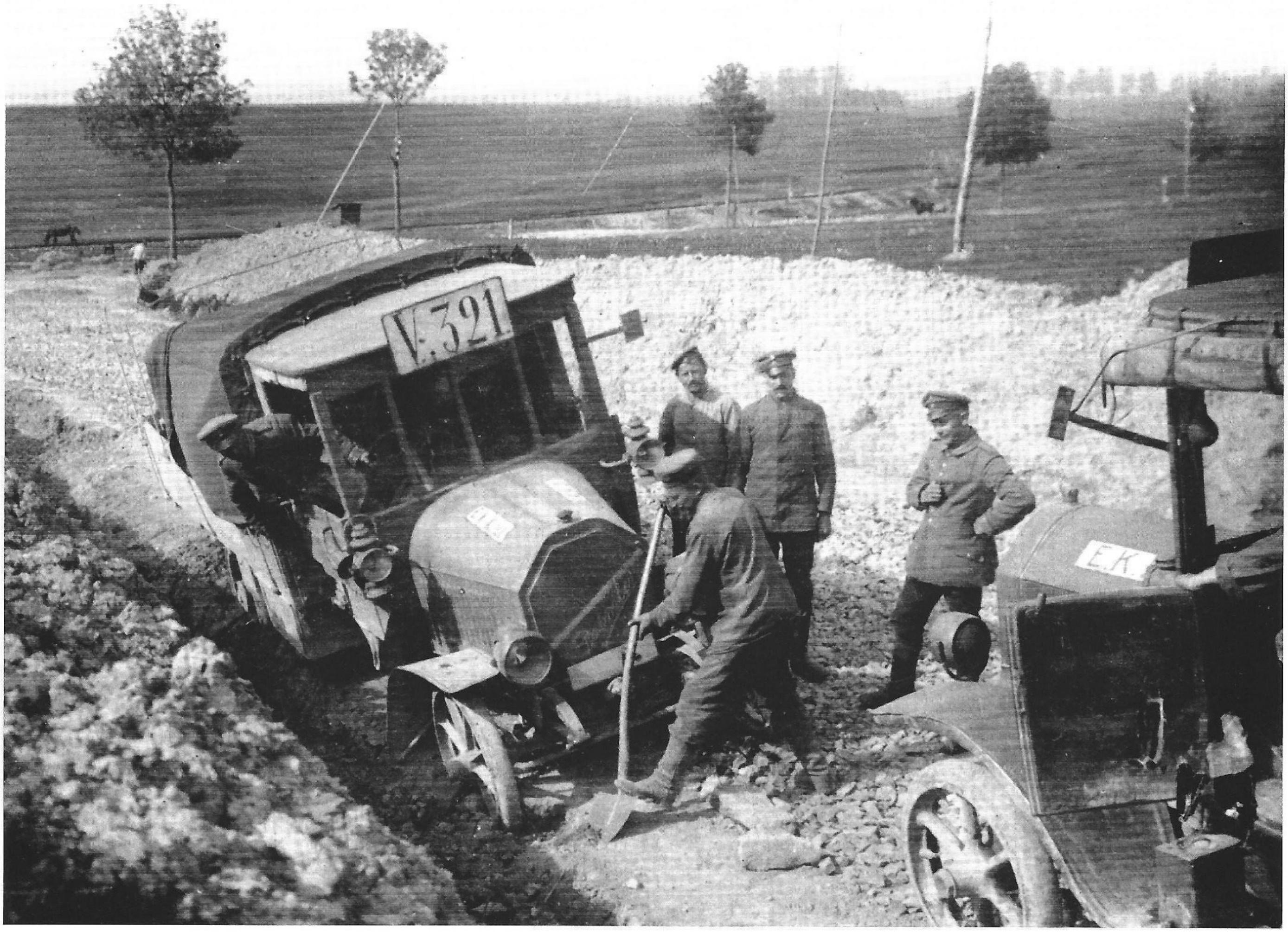


This splendid photo shows another 1914-17 Daimler truck in the 3-ton to 5-ton range, here in service with *Etappen-Kraftwagen-Kolonne 36* of *IV Armee*. It sports the Daimler lettering on an octagonal radiator with brush guard. This perspective allows visibility of details on the hardtop-cab roof. The photo is dated August 1916.
Credit: Jochen Vollert Collection

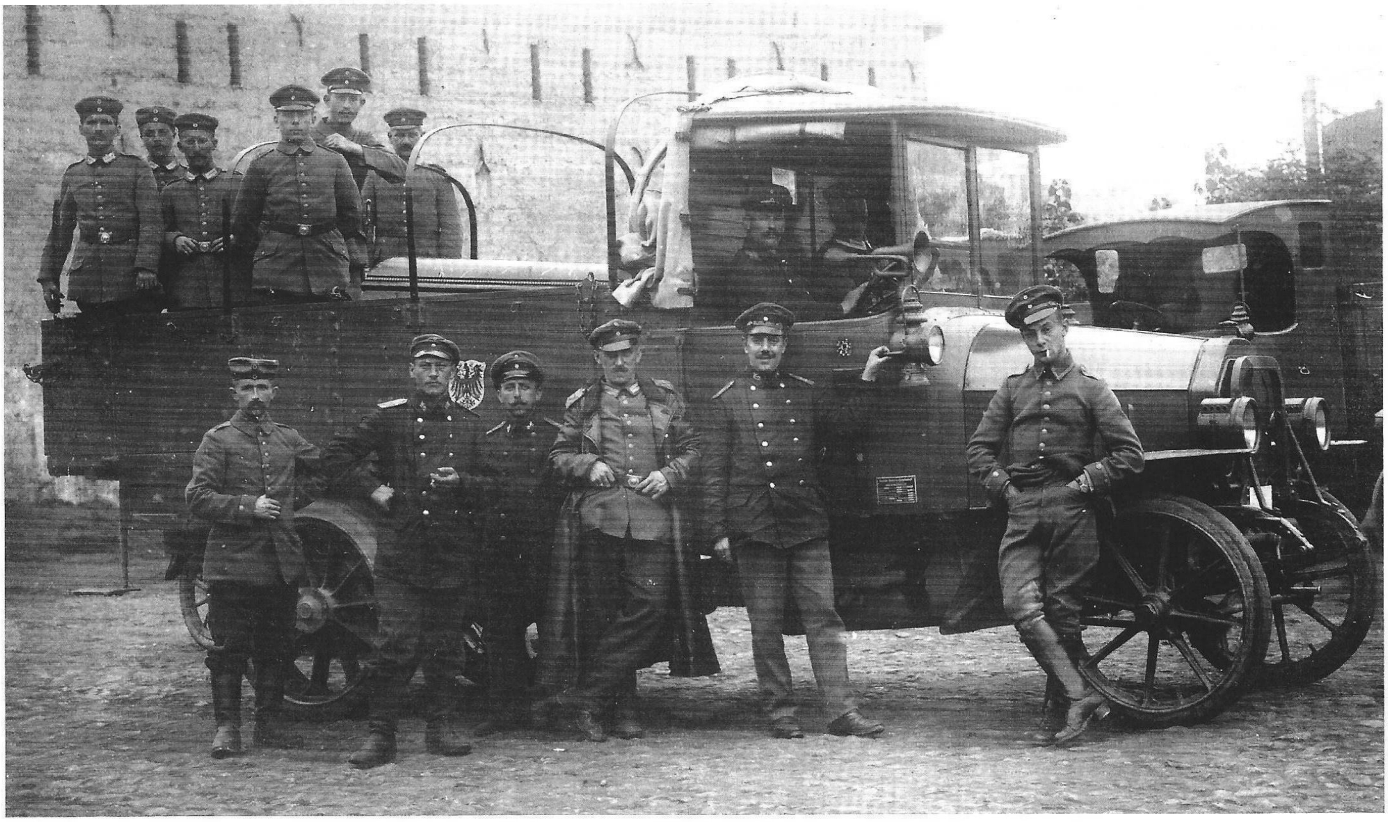




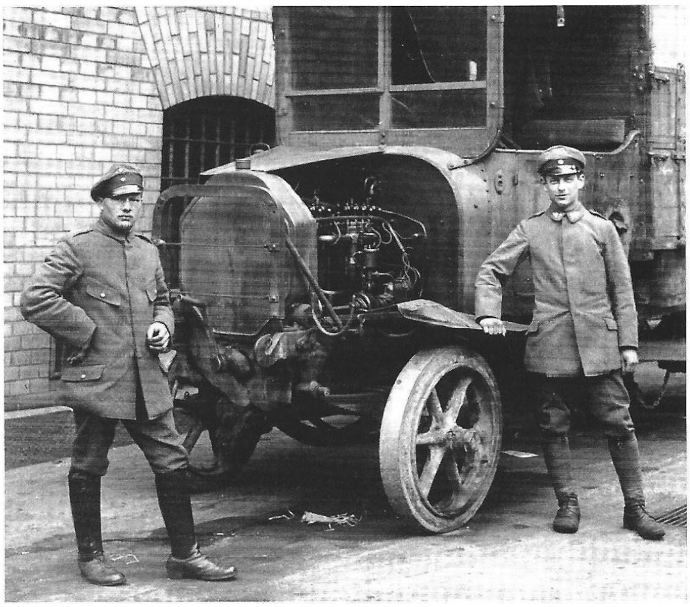
Etappen-Kraftwagen-Kolonne 10 of III Armee proudly shows its three identical Daimler trucks in the 3- to 5-ton-payload range. Note the winterisation kits fitted to the cab sides. Even if equipped with a number of identical makes when they were created, many units received whatever truck type and make was available when replacement vehicles were required to fill the ranks. This policy caused a "flea circus" of truck types within each unit, and led to massive problems in regards to spare-parts supply. Credit: Jochen Vollert Collection



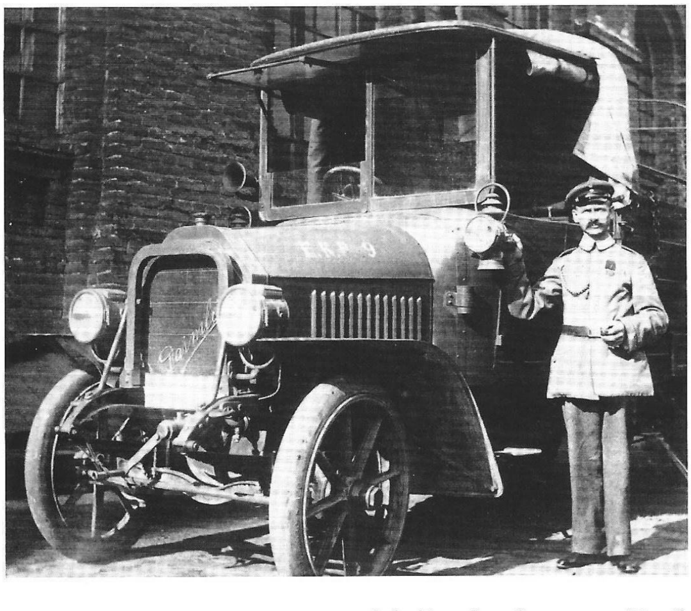
This Daimler 3- to 5-ton truck of *Etappen-Kraftwagen-Kolonne 21* got stuck in a roadside ditch. Note the massively oversized licence plate of *V Armee*, as well as the oddly shaped windscreen that definitely is a field-improvised spare part. Credit: Jochen Vollert Collection



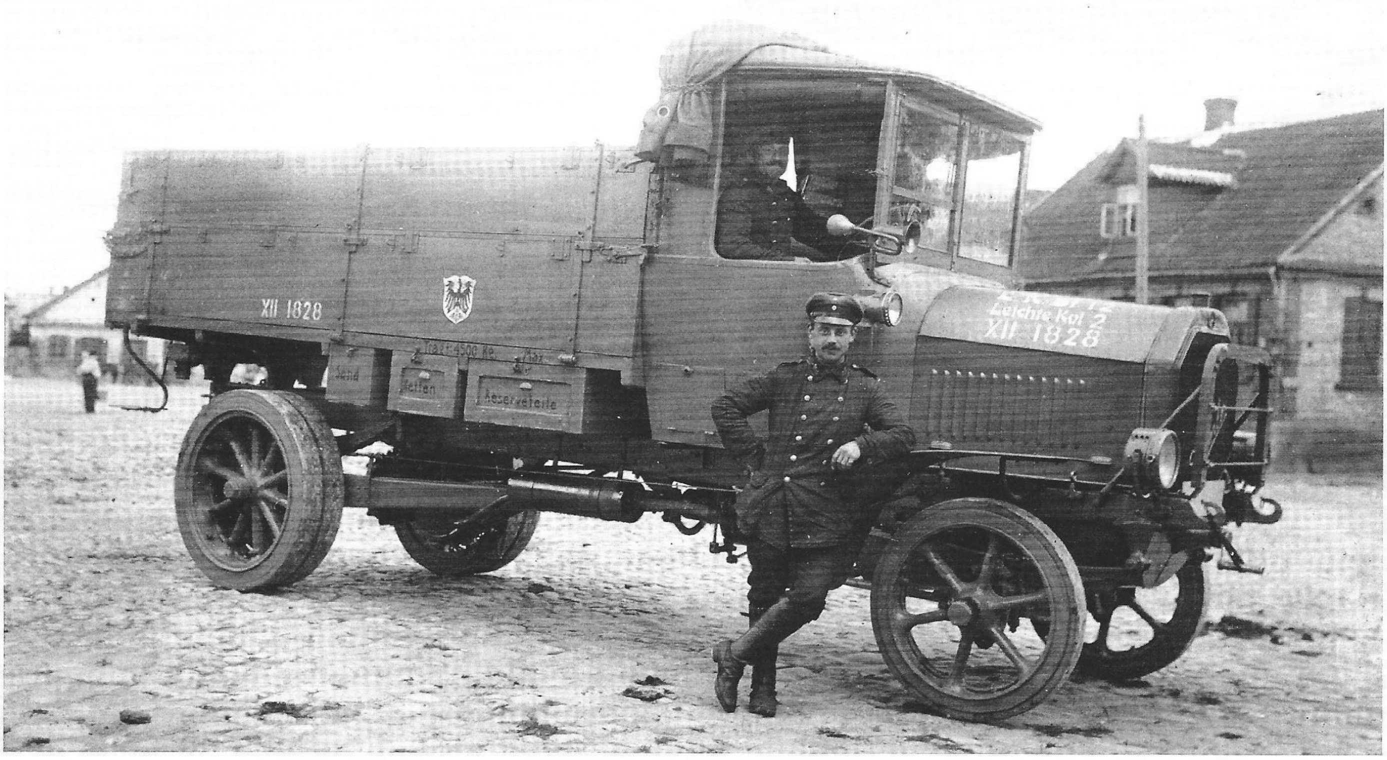
This is one of the scarce occasions of a production placard fitted on a truck (visible between the two soldiers, also see inset). Sadly, it is not legible. Credit: Jochen Vollert Collection



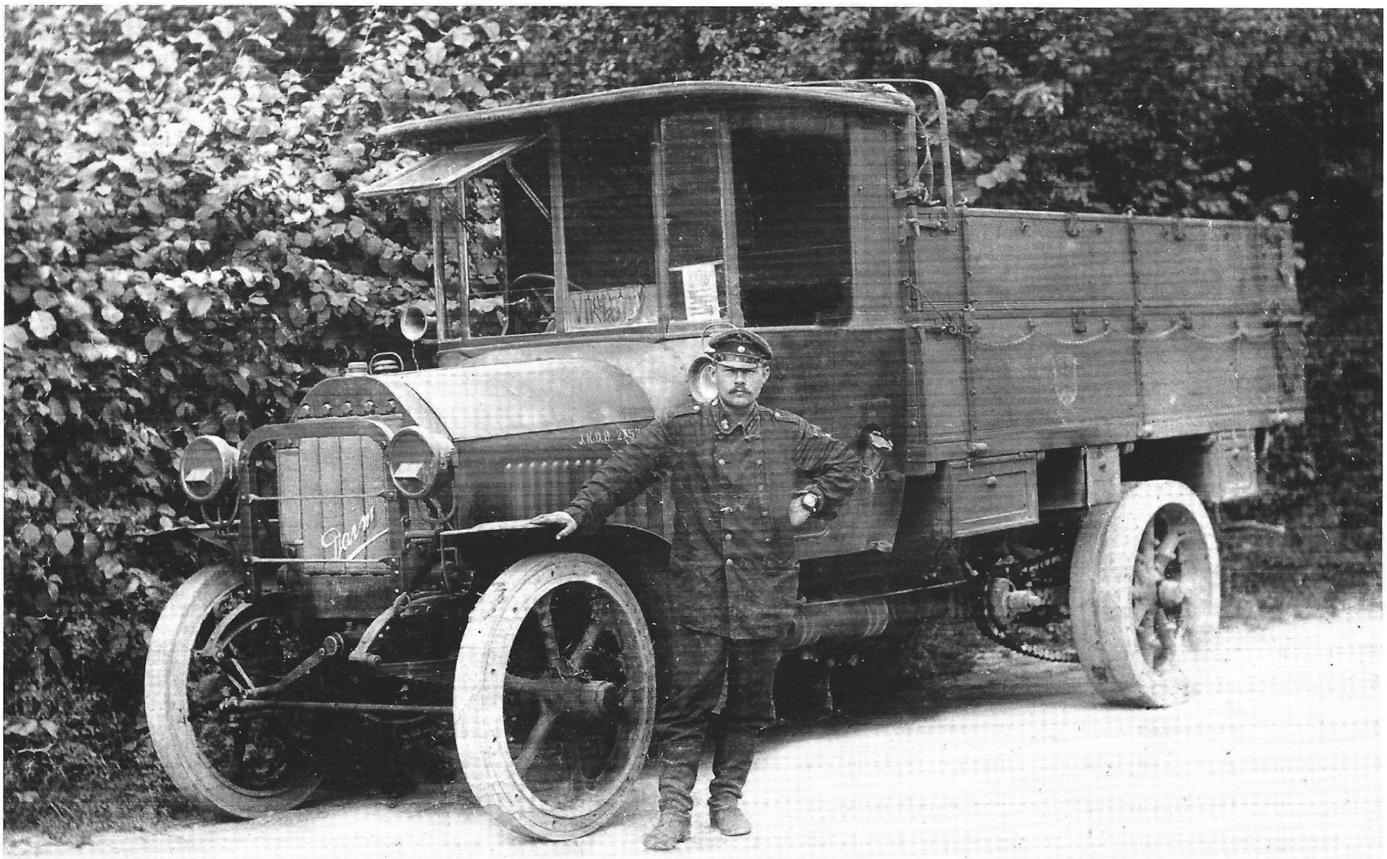
The engine compartment with visible engine of a Daimler truck equipped with the octagonal radiator and military-grade brush guard. The size denotes a 5-ton model. Note the broken window pane. Credit: Jochen Vollert Collection



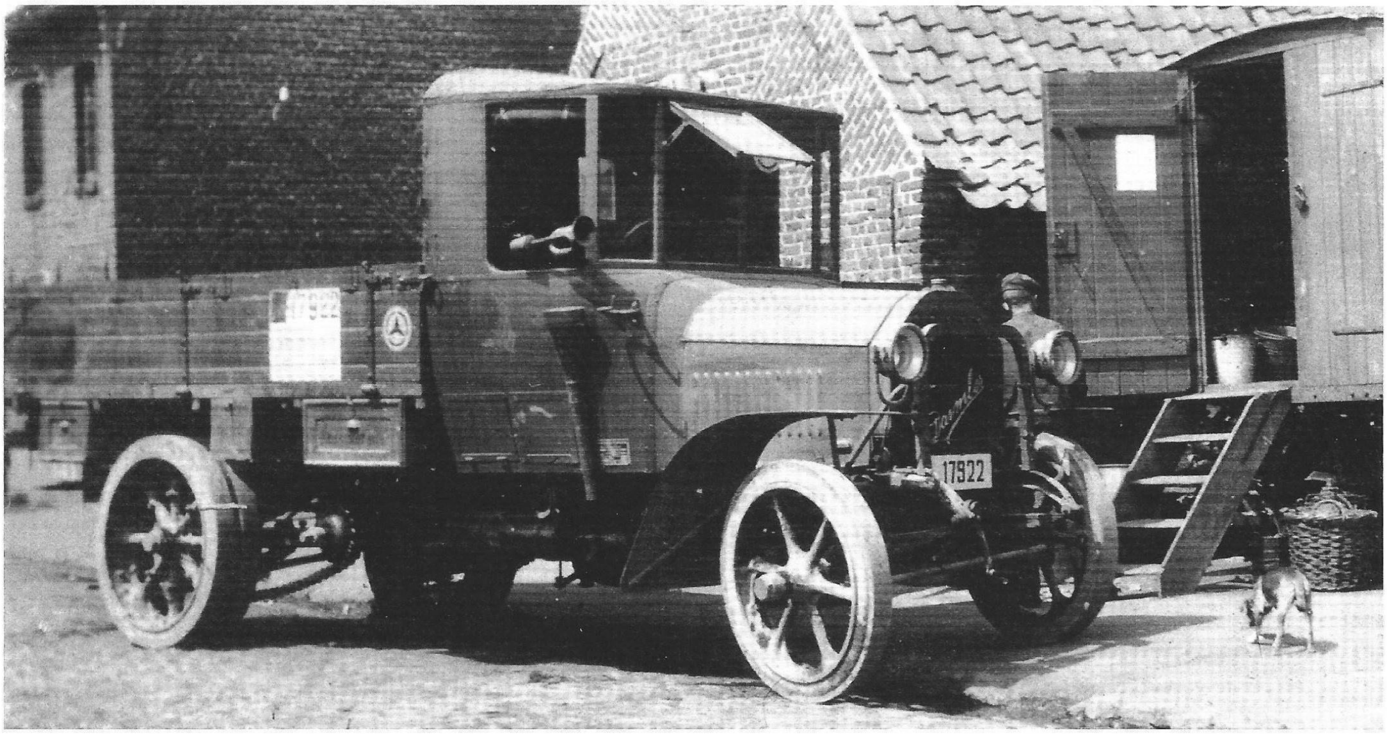
This truck is in service with *Etappen-Kraftwagen-Park 9*, *IX Armee* and shows how parts of the windscreen can be opened to improve ventilation. The photo is dated September 1915. Credit: Jochen Vollert Collection



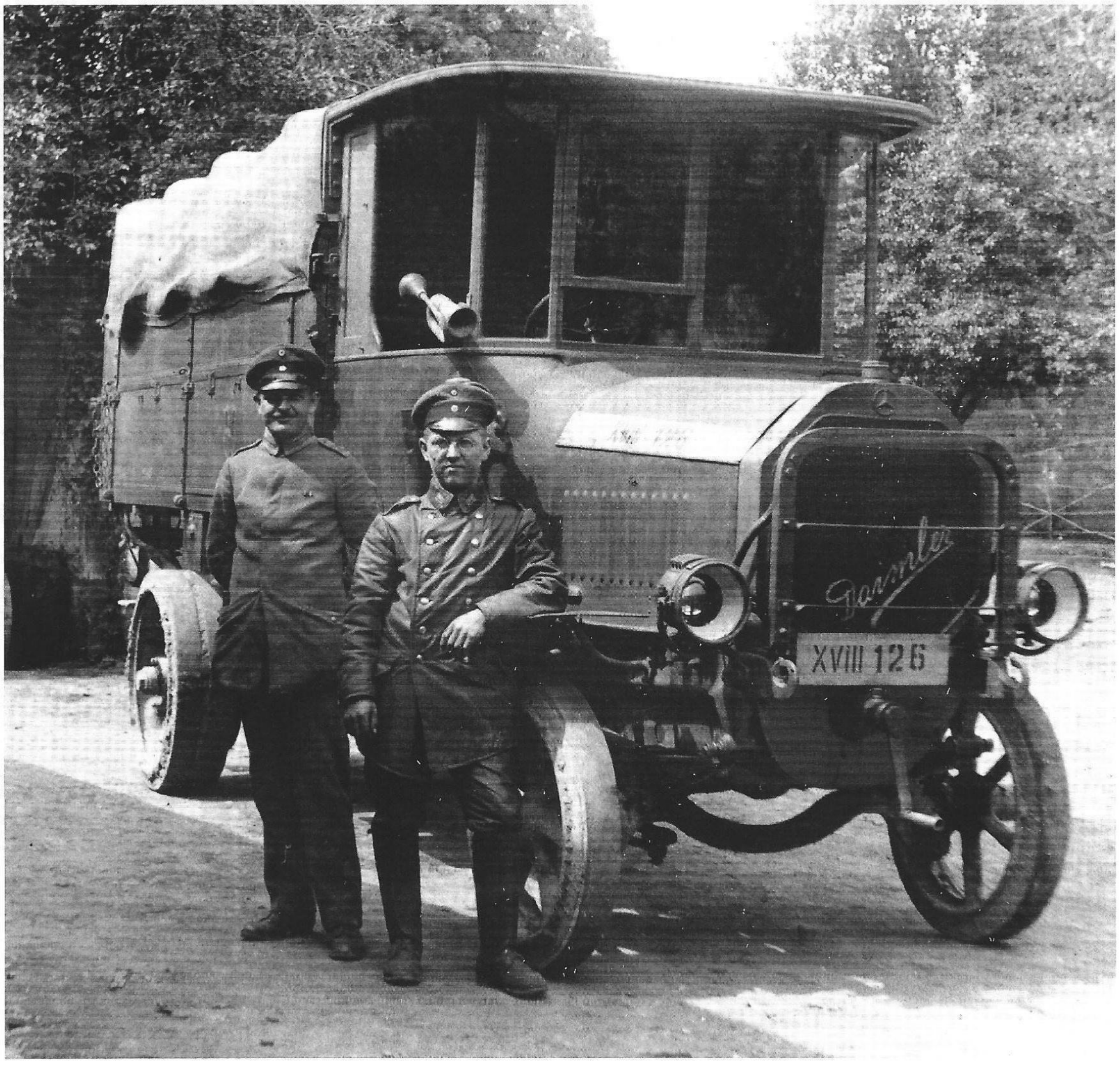
The *Tragkraft* marking of *4500 kg* makes on this Daimler 4.5- or 5-ton truck. The tactical markings are those of *Etappen-Kraftwagen-Staffel 12* (12th Rear Communications Area Motor Vehicle Squadron), *Leichte Kolonne 2* (2nd Light Column), *XII Armee* (12th Army). Note also the labelled stowage boxes: *Sand* (sand), *Ketten* (chains), *Reserveteile* (spare parts) and that this truck has Cardan drive rather than chain drive. Interesting are the ten-spoke rear wheels made of wood and the military grade six-spoke metal wheels on the front axle. Credit: Jochen Vollert Collection



As with Benz trucks, Daimler trucks also featured a screwed radiator that eased repairs when dismantling became necessary. For Daimler this is the fourth type of radiator fitted in the relatively short timeframe of six years from 1912-18. This 3- to 5-ton truck with chain drive sports a *VII Armee* licence plate, *Immobiles-Kraftwagen-Depot 8* lettering on the bonnet, the Prussian crest on the side of the cargo bay, and the Saxonian crest on the windscreen. Note also the blackout-covers for the headlights, used during nighttime operations close to enemy lines. Credit: Jochen Vollert Collection



Another example of a Daimler truck, this time in the 2- to 3-ton-payload range, equipped with the late-war screwed radiator including company lettering. An interesting yet irregular marking is the Daimler trident star logo on the cargo bay side panel. Note also another once more illegible data placard on the right side of the cab. The truck is fitted with full-steel front wheels. Credit: Jochen Vollert Collection



The *Dreizackstern* trident star logo, today called the *Mercedesstern*, was introduced in 1909. It is found on some radiators cast into the upper casing, and seen in combination with Daimler lettering. However, it does not appear on all Daimler truck radiators; in fact, it is a rare appearance up till the 1920s. The reason for its absence on most trucks from 1909-18 is unknown. The truck of the 3- to 5-ton-payload range shown here has the *Dreizackstern* logo, and it bears a licence plate of the 18th Army in Roman figures, a marking repeated on the side of the bonnet. Note also that it has the same double side-panel design of the cargo bay with removable upper sections, as the trucks on the previous page. As the 18th Army was created as late as 1918 the photo was taken that year.
Credit: Jochen Vollert Collection

Sources & Further reading

I took 20+ years of collecting and scrutinising the archives of several experts in the field to compile the wealth of information gathered for this two-volume publication. Among the sources were books on various truck makes, contemporary and modern magazine articles as well as the trained eye of the military vehicle buff. Having said that, the author wishes to highlight the only comprehensive source on German commercial truck manufacturers and types of the pre-1920 era ever published:

Geschichte des Deutschen LKW-Baus — by Wolfgang H. Gebhardt
Band 1: 1896-1918 — published at Frank Kosmos in 1989 and reprinted by Weltbild Verlag 1994

This pocketbook-sized, 190-page publication is indeed a treasure trove of encyclopaedic information on commercial trucks of that era. Mr. Gebhardt's work served as the "skeleton" for the author's research into the topic, provided the framework of facts on which further information, corrections and the military use of the vehicles could be added, and more often than not it was the only reliable source, particularly on the rarer makes. With this publication, the author's curiosity in the topic was launched, and without the inspiration by Gebhardt's work this two-volume book on Imperial German Army trucks would perhaps never have happened. For all German language speakers, I strongly advise *Geschichte des deutschen LKW-Baus* in particular for non-military trucks and extended manufacturer background histories.

For those readers further interested in the civilian range of trucks of the early era and/or specific makes, here is a selection of titles recommended by the author:

°	The Complete Encyclopedia of Commercial Vehicles	G.N. Georgano, Krause Publications 1979
°	Mercedes-Benz Lastwagen & Omnibusse 1896-1986	Werner Oswald, Motorbuch Verlag, 2019
°	Büssing Lastwagen-Album	Bernd Regenberg, Podszun, 2007
°	Magirus Lastwagen-Album	Bernd Regenberg, Podszun, 2005
°	Kraft der vier Ringe	Christian Suhr, verlagkraftakt, 2007
°	Nacke - Sachsens erster Automobilbauer	Runge-Hamann-Giesel, Verkehrsmuseum Dresden, 2007

This publication focuses on standard cargo versions of truck-trailer combinations and solo trucks in military service. Specialist vehicles such as light delivery trucks, delivery vans, fuel tankers, workshop trucks, recovery vehicles, aircraft transport, field mail service and so on will be covered in a forthcoming separate volume in this series of publications.

Anzeige

Tankograd · World War One N° 1001
Sturmpanzer A7V
First of the Panzers
Tankograd · World War One N° 1002
Sturmtruppen
The Kaiser's Elite Stormtroopers
Tankograd · World War One N° 1003
Beute-Tanks
British Tanks in German Service Vol. 1
Tankograd · World War One N° 1004
Beute-Tanks
British Tanks in German Service Vol. 2
Tankograd · World War One N° 1005
Grabenkrieg
German Trench Warfare Vol. 1
Tankograd · World War One N° 1006
Grabenkrieg
German Trench Warfare Vol. 2
Tankograd · World War One N° 1007
Panzer-Kraftwagen
Armoured Cars of the German Army and Freikorps
Tankograd · World War One N° 1008
Feldluftschiffer
The German Balloon Corps and Aerial Reconnaissance
Tankograd · World War One N° 1009
Krafträder
Military Motorcycles
Tankograd · World War One N° 1010
Lastkraftwagen
German Military Trucks Vol. 1
Tankograd · World War One N° 1011
Lastkraftwagen
German Military Trucks Vol. 2
No. 1012
coming in 2022

For further details on Tankograd's Series 1000 'World War One', please visit our website www.tankograd.com

Motorisation of the Imperial German Army began in 1899 when the first truck and the first passenger car with internal combustion engine were tested for their military usability. The development picked up speed from 1908 when the first comparative trial runs were held to find suitable subsidy truck models for the role of *Armeelastzug* (truck-trailer combination). After war had broken out, the solo truck took over this role of supplying the Kaiser's troops on all frontlines.

This publication tells, for the first time ever, the story of how the *Lastkraftwagen* (cargo truck) became the backbone of German military supply operations in World War One. The creation and organisation of the *Kraftfahrtruppe* (Army Motor Transport Corps) is extensively portrayed in text, followed by richly illustrated chapters on the trucks of individual manufacturers. These include major players such as Benz, Daimler and Opel; truck-building legends such as Büssing, Horch, Mannesmann-Mulag and Stoewer – names that today have all faded into history; and also enigmatic makes such as Ageka, Komnick and Windhoff, to name just a few. Additional chapters on wartime service, as well as uniforms, complete the survey of this early era of German military motoring in hitherto unseen completeness.

In a total of 192 pages, distributed over two volumes, this publication is lavishly illustrated with 380 photographs and illustrations, the vast majority of which have never been published before.

In 96 pages, this publication (Vol. 1) is illustrated with 152 black & white photographs and 35 illustrations and graphics. Limited Edition: 999 copies

ISBN 978-3-936519-50-1